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The Manitoba Medical Review

SURGERY

MANITOBA MEDICAL REVIEW

VOL. 28

1948

MANITOBA MEDICAL REVIEW

VOL. 33

1993

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SURGERY

Edited by S. S. Peikoff, M.D.

The Protruded Lumbar Intervertebral Disc

Toward Its More Exact Localization

Arthur L. Murphy, Halifax, N.S.

The protruded lumbar intervertebral disc has attained clinical maturity. It is the most complete major surgical entity to evolve since the epoch making work of Fitz and his surgical cohorts on appendicitis, half a century ago. Every case of right sided abdominal pain and tenderness, preceded by nausea and epigastric pain, is not appendicitis. Every case of sciatic pain and tenderness, preceded by a sore back, spasm of the erector spinae muscles, with flattening of the lumbar curve and elevation of the pelvis on the affected side, is not due to a protruded disc. But the surgeon who fails to consider the latter in his diagnosis must soon be looked upon as a transgressor almost as grave as he who disregards the former.

Twelve years ago the diagnosis of protrusion of the intervertebral disc was based principally on myelograms made after the injection of lipiodol. This heavy medium sometimes failed to fill the normal contours of the dural canal; it sometimes failed to show filling defects when they existed. Once injected, removal of the lipiodol was most difficult. More than once we were distressed to have a postoperative case return, relieved of his disc syndrome, but suffering from sacral nerve pain, and with lipiodol causing herniations of the dura through the sacral foramina. The use of air as a contrast medium was successful only in the hands of a few.

Gradually the clinical picture grew, through the contribution of many workers, and diagnosis swung from an x-ray to a clinical extreme. It was held that the protruded disc could be discovered and localized with complete satisfaction by clinical methods alone.

The surgeon operated and still, on occasion, found nothing. The hypertrophied ligamentum flavum, regular accompaniment to the protruded disc, was no longer considered as a primary pathological condition, although its removal did sometimes give relief from symptoms. Further appreciation of the anatomy of the lower lumbar spine, that the position of the articular facets of L3 to L5 makes for a structural weakness sometimes requiring a fusion operation for its relief, and the recognition of the clinical fact that protruded discs are often multiple, tended to reduce operative failures. The work of Dandy on the

"concealed disc protrusion" brought the whole problem to etiological maturity. That a disc could rupture the annulus fibrosa and produce nerve pressure without breaking the posterior longitudinal ligament, and that it could be discovered at operation by puncture of the ligament—with this, operative failures dropped sharply.

Clinical Errors

Still we believe that diagnostic errors will be many if based upon clinical findings alone. The reasons:

1. The variations in segmental distribution of the lumbar and sacral nerves.

2. The different points at which the intervertebral disc can protrude.

1. Eisler showed, many years ago, that variations from the normal segmental distribution of the nerves making up the cauda equina are present in 20% of cases. It is generally appreciated that while the Tendo Achillis reflex usually travels via the first sacral nerve, it may indicate the state of the fifth lumbar, in fact of any nerve from L3 to S2. Similarly, while the first sacral nerve usually supplies the lateral border of the foot, it may take over the more medial area of the fifth lumbar, leaving the lateral border to the second sacral nerve. It follows that localization of the disc protrusion to either of the two common sites, the lumbo-sacral or the L4-L5 space, by these two most important signs, is not reliable.

2. While the usual protrusion of the intervertebral disc is lateral and at such a position as to exert pressure on the nerve of the lower cord segment (i.e. the disc between L4-L5 pressing on the fifth lumbar nerve), it is possible for a more central protrusion to produce its symptoms by pressure on the nerve of the second lower cord segment (i.e. the L4-L5 disc on the first sacral nerve). A large central protrusion can, of course, press upon the whole cauda equina, producing widespread neurological changes in the legs. Moving out, again, the protrusion may appear, rarely, in an extreme lateral position, to impinge on the nerve of its own cord segment. Clinical signs may be further invalidated by these variations.

Errors in Myelography

Myelography, using pantopaque, has few of the disadvantages met with when lipiodol was the medium. Almost always removable after the examination, the newer oil is not irritating and slowly absorbs, if circumstances prevent its withdrawal. Because it is less viscous, and makes

more intimate contact with the intradural structures, it gives a more accurate myelogram than lipiodol. Even the concealed disc protrusion can usually be localized by it, the swelling of the traumatized nerve and the hyperplasia about it being sufficient to produce a filling defect.

But to depend on myelography alone for diagnosis is a mistake. Not only may it fail to show the concealed disc protrusion, but the smooth, symmetrical filling defect opposite an intervertebral space may be diagnosed a disc protrusion only when clinical signs are reconcilable with it. Particularly if the defect be bilateral, its pathogenicity should be looked on with suspicion. It is our belief that this defect, in the patient with a sore back, but lacking definite signs of terminal nerve involvement, is due most often to a mild duroarachnitis with adhesions to the posterior longitudinal ligament where it most closely approximates the dura, that is, at the level of the intervertebral disc. It follows that only through the studied correlation of clinical and roentgenological observations can the most accurate diagnosis be made.

A Localizing Sign

A localizing sign I have found to be of value in differentiating between disc protrusions at L4-L5 and the lumbo-sacral space has to do with the posterior primary division of the first sacral nerve. Emerging through the first posterior sacral foramen, it sends motor branches to the erector spinae muscles and supplies sensory fibres to a small area of skin over the posterior superior iliac spine. It leaves the larger anterior division only a few millimeters above its foramen. Hence it shares the same fate from protruded disc pressure above. It becomes tender.

The patient will frequently put his finger directly on the nerve as it perforates the multifidus muscle—the most tender spot on his back. Palpation here elicits tenderness, or sometimes, sharp pain. The area of skin supplied by this nerve is usually hyposthetic. Less commonly, it is hyperesthetic.

The posterior primary division of the fifth lumbar nerve does not supply the skin of the back. It has no sensory fibres. Superficial tenderness in this area can be first sacral nerve tenderness only. Taken with the protruded disc syndrome it points almost always to the lumbo-sacral disc. (Adjoining the sacro-iliac joint, this tenderness has probably led to many faulty diagnoses of sacro-iliac arthritis).

The Exploratory Operation

In stressing the points which make for an exact preoperative localization of a lumbar disc protrusion, we realize that there must be certain cases where exploration of more than one intervertebral

space is necessary. Careful diagnostic study will reduce them to a minimum. The exploratory operation on the spine is much more to be dreaded than the exploratory operation on the abdomen. Every surgeon who has cared for compression fractures of the lumbar spine knows what lasting discomfort may be found with the slightest bony deformities. In the early days of disc surgery there was many a patient relieved of his sciatic only to suffer out his remaining days from the effects of a widespread laminectomy. The conservative exploratory operation of today is not being compared with an extensive laminectomy. But it does require dissection that perhaps need not have been done, expose areas of the dura that need not have been exposed.

An operation that confines itself to the area of the lesion, carried out through the interlaminar space, in which the nerve is well protected, bleeding avoided rather than controlled, in which the cortices of the approximating vertebral bodies are roughened to promote postoperative fusion, in which the ligamentum flavum is preserved to prevent the formation of scar tissue in the interlaminar space, is a safe procedure and is followed, in almost every case, by a good end result.

In our experience, the conservative operation is simplified by the use of pentothal anaesthesia with curare. Small doses of curare produce sufficient relaxation of the erector spinae muscles to permit retraction, yet do not abolish the nerve impulses to the muscles. Thus, any more than the most gentle pressure on the first sacral nerve will produce twitching of the gluteus medius. With this very real danger signal to guide him the surgeon can depend, for a great part of the operation, on the sense of touch which here, as in the abdomen, is often a wiser counsellor than sight. The slight lowering of blood pressure produced by the two drugs does, with operative care, result in a practically bloodless field.

Summary

The development of the protruded intervertebral disc syndrome is reviewed and some of the weak points in clinical and roentgenological diagnosis are considered. The importance of using all aids in determining the exact site of the disc protrusion, and the significance of tenderness over the posterior primary division of the first sacral nerve, in lumbo-sacral disc protrusion, are stressed. Complete study of each case makes for good results with a most conservative operative procedure done under pentothal anaesthesia with curare and lessens the need for the exploratory operation.

I am indebted to Dr. Richard Saunders, of the Department of Anatomy, Dalhousie University, for his dissections on the lumbar and sacral nerves; and to Dr. Carl Stoddard, of the Department of Anaesthesia, Victoria General Hospital, for his work on anaesthesia in intervertebral disc surgery.

CARDIOLOGY

Edited by J. M. McEachern, M.D.

Hints in Diagnosis and Management of Cardiac Disorders

Ben H. Lyons, M.D.

The purpose of this article is not to present anything new, but to emphasize a few common procedures and observations which may be helpful in diagnosis or management of a cardiac patient.

Venous Pressure

Every physician when examining a patient observes the presence or absence of distention in the veins of the neck. An increase of pressure in these veins indicates an impediment to the flow of blood to the heart, whether due to right heart failure, pericarditis, or obstruction of the superior vena cava by mediastinal new growth or by thrombosis.

This well known observation is mentioned to suggest that exact determination of the increase in pressure is a valuable aid in assessing the progress of the patient. The normal venous pressure at the level of the left auricle is 30-110 mm. of water. It can be measured with little difficulty by inserting a needle with attached syringe and manometer into the anticubital veins and measuring the height of the column of blood, as is done with spinal fluid pressure determination. For clinical purposes it is in most cases, however, not necessary to carry out the actual measurement in this way. The veins themselves serve as excellent manometers. The distance from the third interspace to the top of the clavicle is about 100 mm.; therefore any distention of the veins of the neck observed in the upright position is abnormal. By measuring the height of the column from the third interspace, a fairly close approximation of the actual pressure can be arrived at. The method can also be applied in the arm, either in the lying or sitting position, by passively raising and lowering the limb, noting the filling of a selected vein. In the sitting position the height is measured, as is the neck vein, from the third space. If the patient is lying down a point of 50 mm. posterior to the sternum is used as the base. Comparison of the venous pressure measurements in a patient gives an excellent quantitative index of the state of the right ventricle.

Circulation Time

This is an easily carried out procedure which may be very helpful in differential diagnosis. A substance is injected into an arm vein and the time of its appearance at another point noted. Many substances and methods have been used.

Useful substances are calcium gluconate 5 c.c. 10% solution, and dycholium, 5 c.c. 20%. These measure the arm to tongue time. An 18 gauge needle is inserted into the vein and the solution rapidly injected. The time is noted from the beginning of the injection until the patient (who has been instructed) states that he feels a burning or hot sensation in his mouth. The average time is 10 to 16 seconds. This includes the time taken for the solution to traverse the lung bed and both sides of the heart. The right side of the circulation can be measured separately, using aether 5 minims, and noting the smell in the breath.

Circulation time is accelerated in fever, hyperthyroidism and anaemia, and slowed in myxedema and heart failure. Its greatest use is in differentiating between heart failure and other conditions as a cause of symptoms. It is of particular value in assessing their origin if two diseases appear to be present, for example, emphysema and coronary disease. Pulmonary disease per se does not affect the circulation time. There are times when we are uncertain if asthma is of bronchial or cardiac origin. The differentiation is important from the point of view of treatment. Plotz states that in doubtful cases the circulation time should give a clear cut result as it will be greatly delayed only in cardiac disease—usually 30 to 60 seconds.

Objections have been raised as to the value of the circulation time. Meneely and Segalor¹ found that in one-third of their tests the time in cases with no cardiac disease was above the accepted normal—running 20 to 29 seconds, so that a figure in this range would not be diagnostically significant. Ruskin and Decherd² have reported on the use of thiamin 200 to 300 mgms. as the test dose, and in their series found that only rarely did the normal exceed their upper limit (13 seconds). If their studies are corroborated, thiamin would appear to be the test of choice. However, toxic effects have been noted.

Cardiac Asthma vs. Bronchial Asthma

The physician is at time faced with the problem of a patient with acute dyspnea and wheezing respirations that sound like bronchial asthma, who has evidence of hypertensive heart disease. There is no unanimity of opinion as to the mechanism of the bronchospasm. Levine³ believes it is a true allergy and that sibilant rhonci do not carry the serious prognosis associated with moist rales. The presence of moist rales usually indicates the cardiac aetiology. However, Plotz¹ states that moist rales may also be found in true bronchial asthma, while occasionally pure heart failure may

show rhonchi only. Faced with the dilemma of treating such a patient there is one effective and safe method—intravenous aminophyllin. If this is not available Plotz states that adrenalin should be given. This will relieve bronchial asthma, and contrary to previous belief, he states it will relieve and not be harmful in treating asthmatic breathing due to heart disease. As morphine is absolutely contra-indicated in bronchial asthma, his advice in treating these doubtful cases is worth noting. As has been mentioned the circulation time will be of value in differential diagnosis when this can be carried out.

Systolic Murmur at the Apex

A soft systolic murmur at the apex is a common finding on physical examination. In the past these patients were often told they had heart disease on this finding alone. The pendulum has swung the other way so that many physicians now disregard this murmur by itself. Of the two attitudes the latter is certainly the healthiest—little harm was done if latent heart disease was present; whereas many patients on being told they had a heart murmur, developed a cardiac neurosis which created a real disability.

Harris⁵ has made a study of these murmurs and followed up a large number for a period of years. His findings are of interest. Murmurs may be considered as organic whether due to deformity of the valve or dilatation of the valve ring, from myocardial disease, anemia, etc. In the absence of other evidence of heart disease such as cardiac enlargement or diastolic murmurs, he found that if the murmur was loud and blowing, so that it was well transmitted to the axilla, it was nearly always organic. If soft and non-transmitted, factors associated with increased haemodynamics had to be ruled out—tachycardia, fever, hyperthyroidism and anemia. A systolic murmur at the apex may be the first sign to call the attention of the examiner to an unrecognized anemia or hyperthyroid state.

Occasionally a functional murmur at the pulmonary area may be transmitted to the apex so the examiner must be sure that the murmur he hears at the apex is maximal there. Extracardiac or cardiorespiratory murmurs can usually be differentiated by having the patient respire deeply, when a murmur of this type will usually disappear at one point in the cycle. These also vary with change of position, although organic murmurs may also vary thus to a certain degree.

Having carried out all the above examinations, there will be a residuum of unexplained murmurs. Harris correlated the prognosis of these in relation to a positive history of rheumatic fever or rheumatic stigmata. He found that eventually 50% with such a history proved to be organic while

only 17% without such a history turned out the way. Observation over a period of several years may be required to determine the answer.

It follows from the above, that even in the presence of a history of rheumatic fever, the murmur should not be definitely labelled as organic. To do so would be to invite a cardiac neurosis. Not to do so would do no harm since restrictions on the patient's activity would not in any case be indicated. It would be wise, however, to communicate the information gained to a relative, so that a follow up a year or two later might be arranged; and to protect your reputation should it be discovered by another physician.

Digitalis

Many years ago Wenkebach, famous Viennese cardiologist, (quoted by Van der Veer⁶) said "Digitalis is one of the most important and serious duties of the general physician; it demands a great deal of skill, power of observation, keen interest and experience. A long life is too short to learn enough about this wonderful drug."

This statement holds true more than ever today when we are offered many new preparations to use. Enthusiastic detail men extol the virtues of their proprietary preparations. Let us, therefore, quickly survey the glycosides offered. These are derived from two plants, digitalis purpurea and digitalis lanata, as follows:

Glycosides		Trade Preparations	
		D. PURPUREA	
Digitoxin	-----	Digitalen Nativele (Rougier Freres)	
	-----	Puridigen, (Wyeth)	
	-----	Crystodigin, (Lilly)	
Gitoxin	-----	Digitoxin, (Squibb, Parke Davis, Abbot, Frosst, Stearns)	
Gitalen	-----	Gitalen (Rare Chemicals)	
	-----	Digalen (Hoffman La Roche)	
Mixtures of above	-----	Digifolen (Ciba)	
		D. LANATA	
Lanatoside A	-----	Cedilanid (Sandoz)	
Lanatoside B	-----	Digoxin (Burrows & Wellcomb)	
Lanatoside C	-----	(hydrolysis of Lanatoside C)	
Mixtures of above	-----	Digilanid (Sandoz)	

Questions to be answered are: Should digitalis leaf be discarded in favor of these preparations, and if so, which should be used? It must first be emphasized that in adequate and proportionate dosage there is absolutely no therapeutic difference in the effect on the circulation between the leaf and any of the glycosides. If the patient tolerates full dosage of the leaf, nothing is gained by substitution. Differences lie in dosage, absorption, and elimination. If the physician wishes to use one of these preparations he must familiarize himself with its actions. The experience gained by every medical man in the use of the digitalis leaf is too valuable for him to switch to new preparations unless he will carefully study the action of the glycoside he uses. If he decides to

use them he should select one or possibly two preparations and stay with them.

The following are the advantages of the glycosides: (1) Being pure, their potency is constant. (2) Irritant local action on the stomach is minimal so that nausea, if it develops, is due to central action only. (3) They are excellent for intravenous use.

The fact that nausea is not an early symptom means that the physician using the drug will have to be more alert for evidence of over-dosage. The first symptoms may indicate severe toxicity, such as colored vision, or mental confusion. Alterations in pulse rate or rhythm will have to be carefully noted. Sudden changes in the rhythm of the pulse should be viewed with suspicion. An irregular pulse suddenly becoming regular may indicate a complete heart block. A sudden increase in rate may be due to a tachycardia from an ectopic focus. A heart which is regular and starts to fibrillate while under digitalis treatment, may do so as a toxic manifestation. Therefore, the onset of fibrillation while a patient is receiving full amounts of digitalis, usually indicates stoppage of the drug, instead of giving more. In atypical cases the observation of digitalis effects on the cardiograph may be of valuable assistance.

As to the relative merit of glycosides available, space does not allow detailed comparisons and data. The literature of the manufacturer should be studied before using any preparation. Most of the reported studies have been carried out with cedilanid, digoxin, and digitoxin preparations. A keen rivalry exists, particularly between digitoxin and digoxin, mainly because Gold⁷ has championed the former and DeGraff⁸ the latter.

These drugs are each about 1,000 times as powerful as digitalis. The digitalizing dose of digitoxin is about 1.2 mgms. as against 1.2 grams for digitalis, and the maintenance dose on the average is likewise 1/1000 or .1 mgm. as against .1 gram of the leaf. Its speed of absorption and excretion are much like that of digitalis, so on the whole it is not difficult to learn to manage this drug after experience with digitalis.

Because it is completely absorbed the intravenous digitalizing dose is the same as the oral, namely 1.2 mgms. It is rather surprising to find that it takes about the same length of time to get an effect intravenously as orally, namely 6 hours, so there is no advantage in intravenous administration of digitoxin if the patient can take the drug orally.

The literature of the manufacturers advise the method advocated by Gold of giving the entire digitalizing amount in one dose. Nearly all other authorities condemn this method with its possible toxicity—when an initial dose of $\frac{1}{2}$ to $\frac{1}{3}$ the total will give a therapeutic effect.

Digoxin and Cedilanid present considerable differences in absorption and excretion to that of digitoxin. Intravenously the dosage is comparable but they are more rapidly acting so that with digoxin a complete effect by vein may be obtained in an hour or two. Hence in emergencies these drugs are to be preferred, their speed of action being comparable to Strophanthin.

Given by mouth it is found that absorption with Digoxin and Cedilanid is incomplete, so that the digitalizing doses are respectively 3.75 and 7.5 mgms., or 3 and 6 times greater than digitoxin. Both drugs are excreted, however, twice as fast as is digitalis or digitoxin, so that proportionately the maintenance dose has to be higher, on the average $\frac{1}{7}$ of the digitalizing dose instead of $\frac{1}{2}$.

Gold claims that the complete absorption of digitoxin results in less local irritation, and that the slow excretion is of advantage in maintenance. De Graff, on the other hand, favours digoxin because the more rapid excretion reduces the period of toxicity should it occur. He believes that cedilanid is harder to control by oral administration whereas it is an excellent preparation for intravenous use.

Quinidine

Quinidine in some ways is the opposite of digitalis. It is a sedative and depressant of heart muscle, and not a tonic. It is, therefore, very useful where irritable conditions are present in

Preparation	To Digitalize		To Maintain	
	Intravenous	Oral	Time of Excretion	
	Speed of Action	Absorption		Dose
Digitalis Leaves		About 1/5	14-21 days	.1 grams
Digitoxin	6 hrs. 1-1.2-2 mgms	Complete 1-1.2-2 mgms	14-21 days	.07- .1- .2-.3 mgms
Digoxin	1-3 hrs. 1-2 mgms	About 1/3 3.5-4.0 mgms	5-7 days	.25- .5-1.5 mgms
Cedilanid	3-4 hrs. 1-1.6-2 mgms	About 1/5 7.5-10.0 mgms	10 days	.5-1.0-3.0 mgms

Heavy figures indicate average dosage.

Note that average maintenance dose of Digitoxin is 0.1 mgm and not .2 as recently mentioned in manufacturers literature.

Note that average maintenance dose of Digoxin is 0.5 mgm and not .25 as recently mentioned in manufacturers literature.

a structurally normal heart; but should be used cautiously, and only for very definite indications, in the presence of organic heart disease. Frequent extra systoles, recurrent paroxysmal tachycardia, paroxysmal functional fibrillation, post-thyroidectomy irregularities, etc., may be benefitted by its administration.

In the presence of organic disease with long standing fibrillation, quinidine should not be used for several reasons: (1) The fibrillation usually recurs. (2) The tonic effects of digitalis are not present. (3) A slow fibrillation is nearly as efficient as a regular rhythm. (4) Cardiac arrest has at times occurred on conversion to normal rhythm. (5) There is danger of embolism from expulsion of a clot in an auricular appendage as the auricle contracts on it. As to this last danger, embolism occurs infrequently; and from a statistical point of view the danger of an embolus following restoration of normal rhythm is not greater than the eventual expectancy of embolism in fibrillation. However, the physician would not feel happy if an embolus developed as a result of his treatment, rather than accidentally in the course of the disease.

In ventricular tachycardia, irrespective of the seriousness of the underlying disease it is, of course, necessary to use quinidine. It is advisable to administer quinidine prophylactically after a coronary occlusion, should premature ventricular systoles manifest themselves.

Askey¹⁰ has recently advocated the use of quinidine in the one type of case where all the contra-indications appear to be present, viz., severe congestive failure with fibrillation, not responding to digitalis and other measures. He has found that occasionally in an apparently hopeless case, restoration of sinus rhythm with quinidine resulted in dramatic improvement. As there is definite danger in these cases, both of embolism and cardiac arrest, the treatment may be classified as heroic; but used where the prognosis appears hopeless, it may be justified by an occasional dramatic result. If attempted, the patient should be in hospital under frequent observation, with electrocardiographic tracings taken after every second dose. Usual procedure is to give grs. 6 OH2 x 5, stopping, of course, and going on a maintenance dose (usually grs. 3 t.i.d.), when the rhythm is normal.

Salt and Water

Fundamental changes have occurred in our knowledge and hence our treatment of congestive failure during the past few years. Restriction of fluids was considered fundamental and while

most physicians limited salt, many also prescribed "curtasal" as a substitute, which contains no chloride, but plenty of sodium. It is now believed that a fundamental fault is the failure of the kidney in heart failure to excrete the sodium ion. Sodium is thus retained in the tissues and holds water with it. Irrespective of fluids administered, this sodium will hold its quota of water. Schem actually showed that by forcing fluids and thus stimulating the kidneys to diuresis, salt was carried off and edema reduced. Paradoxically, in the presence of extra cellular edema, the cellular fluids may be decreased; and free administration of fluids helps in their rehydration. (It is not unusual to see patients with edema whose tongue is dry as a board).

Fluids ad lib, but strict limitation of sodium, is the fundamental tenet in treatment of cardiac edema. Acidification of the urine by ammonium chloride, and diuretics such as mercurials all aid in removing excess sodium. The "acid ash" diet is often of help. In this diet, meat, fish, eggs and cereals are emphasized. Milk, fruits and vegetables are curtailed except for cranberries, plums, prunes and rhubarb.

The following quotation describes well the modern concept of free fluid administration in cardiac edema (except that sodium restriction is not mentioned).

"The patients should be enjoined to drink very freely during its (digitalis) operation. I mean they should drink whatever they prefer and in as great quantity as their appetite for drink demands. This direction is the more necessary, as they are very generally prepossessed with an idea of drying up a dropsy, by abstinence from liquids, and fear to add to the disease, by indulging their inclination to drink."

This quotation is from "An Account of the Foxglove," by William Withering (discoverer of digitalis), in the year 1785.

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GYNECOLOGY

Edited by R. Lyons, B.A., M.R.C.S., L.R.C.P., M.R.C.O.G.

Postmenopausal Bleeding Due to Estrogen Therapy

Brian D. Best, M.D., F.R.C.S. (Edin.)

Bleeding from the vagina after establishment of the menopause is the most serious and significant of all forms of bleeding in the female. In one series¹, 80 per cent of such cases were found to have pelvic tumors and 66 2/3 per cent were malignant. A symptom with such grave implications always demands careful and complete investigation including diagnostic curettage. Any appearance of blood after a full year following the menopause generally means an organic lesion is present.

Howard Taylor and R. Millen² in 1936 reported the following incidence of causal lesions of postmenopausal bleeding:

Cancer of Cervix	37%
Cancer of Body	15%
Prolapse with Decubitus Ulcers	11%
Polyps	6%
Ovarian Tumors	6%
Endometrial Hyperplasia and Polyp	4½%

The diagnosis of such lesions is made along the usual lines. (Uncomplicated fibroids are **not** a cause of postmenopausal bleeding).

In recent years another common cause of postmenopausal bleeding has appeared, viz. estrogen-withdrawal bleeding. It is well known that the group of hormones known as estrogens stimulate proliferation of the endometrium, a process normally occurring in the first half of each menstrual cycle. During the climacteric period, however, nature — through ovarian failure — gradually withdraws estrogens from the system and amenorrhoea permanently follows. The administration of estrogens to alleviate hot flushes and other troublesome symptoms is justifiable and useful but seldom needs to be carried on for more than six months in most cases. One's aim is simply to let the patient down more easily from the pre- to the postclimacteric hormonal level, and weaning from the drug must always be eventually accomplished.

In the postmenopausal age, the writer knows of no good indication for continuance or initiation of estrogen therapy, except postmenopausal or senile vaginitis. In this condition, estrogen therapy has been shown to be a very useful agent, but it is unnecessary to give it orally as the most effective method consists in using estrogen suppositories in the vagina.

One undesirable side-effect of estrogen therapy is troublesome and disturbing uterine bleeding

in ten per cent or more of such cases³. This usually occurs when the dose is reduced or the drug withdrawn, but also is seen during continuous therapy — probably from varying levels of blood estrogen due to changing rates of metabolism and excretion. The exclusion of carcinoma of the corpus always comes up in these patients. Two plans are available: (a) Diagnostic curettage in all and (b) the more practicable one of withdrawing permanently all estrogen therapy. If bleeding continues or recurs despite this step, curettage is mandatory.

The use of barbiturates, bromides, or testosterone orally or parenterally are preferable to estrogen in the control of neurovascular symptoms in the postmenopausal period.

In every case of postmenopausal bleeding we must nowadays question the patient regarding medications which might be estrogenic. The abolition of estrogen treatment in the older age group is strongly recommended altogether apart from its theoretical implication as a carcinogenetic agent.

Finally, the presence of ovarian tumors must always be thought of. Taylor's series had six per cent. Shaw, in 300 ovarian tumors, noted postmenopausal bleeding in eleven cases. Of these eleven, five were pseudomucinous cystadenomata, five were carcinoma of ovary, and only one was a granulosa cell tumor. The latter tumor is frequently considered the only type of ovarian tumor causing postmenopausal bleeding. This concept, due perhaps to faulty emphasis in teaching, should be greatly modified.

In a woman well past the menopause, and in whom cervix and corpus show no malignancy and where no other causative lesions are found for postmenopausal bleeding, I feel one is justified in advising laparotomy as so often an ovarian tumor will be found. Two cases of ovarian malignancy recently seen by the writer were overlooked until fairly well advanced because this dictum was not followed.

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Impressions of the Third American Congress of Obstetrics and Gynaecology, St. Louis, Sept. 8th-12th, 1947

Dr. Ross Mitchell

St. Louis on the Mississippi is almost 1,200 miles straight south of Winnipeg on the Red. It

was founded in 1764 by a French trader. It has belonged to France, Spain, and since May 10, 1804, through the Louisiana Purchase, to the United States. Many of its early settlers came from the Southern states. It has a large German population and many negroes. It is the seat of Washington and St. Louis Universities, of a municipal open air opera and a wonderful zoo, of the Anheuser-Busch brewery, and of the St. Louis Cardinals. It is the largest city in the state of Missouri and the eighth largest city in the United States.

Formerly it had a reputation for smokiness but a recent campaign has made it almost free of smoke, and the white stone buildings gleam in the sunshine. During our stay, there was plenty of both sunshine and heat—with a temperature of over 90 degrees broken only by one brief spell.

Arriving on the morning of Sept. 7, my wife and I found our reservations at the Park Plaza Hotel, and in the afternoon went to Sportsman's Park to see the Cardinals play the Cincinnati Reds. At that time the Cards were only a few games behind Brooklyn, and everyone talked baseball. We saw the Cards knock Blackwell out of the box and win easily, but a day or two later, Brooklyn arrived for a crucial four-game series and won three out of four; so the spirit of St. Louis took a decided drop.

Next morning at 9.00 the Third American Congress opened. The First Congress was held in Cleveland in September, 1939. It grew out of the White House Conference on Maternal and Infant care. The Second Congress was held at St. Louis in April, 1942, after the United States had entered World War II. The general chairman of the Third Congress was Dr. Fred L. Adair, a pioneer in Maternal and child welfare work in the United States. One need only look at this somewhat tired-looking elderly man to realize his high character and administrative ability.

The Congress met in the massive St. Louis Auditorium which fills a city block. My first impression was one of efficiency. At 9.00 a.m., the time set for the opening, registration began and proceeded smoothly, the scientific and commercial exhibits were in place and at 10.30 the opening ceremonies began in the Opera House within the Auditorium. At 11.00 a.m. Dr. Joseph L. Baer gave an address on Current Teaching Trends in Obstetrics and Gynecology. He hoped that some day a method of measuring the moral fibre in the selection of medical students may be evolved. He defined excellent teachers as those who were competent, who possessed adequate clinical experience for which there is no substitute, and who enjoyed teaching. He believed in full time heads of departments, but stated that salaries paid should be adequate.

In the afternoon I saw and heard Arthur Limb Hunt, Rochester, Minn., demonstrate breech deliveries. This was one of a series of six mannikin demonstrations held twice daily—four devoted to forceps, two to breech deliveries. Next a Symposium on Sterility with Pendelton Tompkins of San Francisco as Chairman—and Seigler, Michelson, Pommerenke, Sturgis, Browne and Bradburn as speakers. At 4.00 p.m. there was a round-table discussion on Asphyxia of the Newborn with Edith L. Potter of Chicago as leader. This round-table was only one of six going on at the same time, and one wished at times that he had a split personality.

On Tuesday morning the general meeting of all groups which took in not only doctors, but nurses, hospital administrators, medical educators and public health officials, had for its topic Anaesthesia and Analgesia with N. J. Eastman of Baltimore, as Moderator. John Adriani, New Orleans spoke on Spinal Anaesthesia; Arthur Baptist Hagerstown, New York, on Caudal Anaesthesia; J. P. Greenhill, Chicago, on Local Infiltration, and B. B. Hershenson, Boston, on Inhalation Anaesthesia. There was an excellent discussion.

A notable feature of this Congress was that the scheduled meetings began on time. The chairman or Moderator kept the speakers to their allotted interval, and they ended on time.

Following the discussion on Anaesthesia, there was a joint session of the medical and nursing sections on Emotional Aspects of Pregnancy, which was most interesting. The Round Table I elected was on Ovulation. The leader, John Hammond of San Francisco, ended by saying that the determination of the time of ovulation by basal body temperature was the most practical method yet devised. There was a brisk discussion by Hartman, Pommerenke, Kurzrok, Popenoe, Mazier and Seigler.

In the evening Hon. Dwight H. Green, the newly-elected Governor of Illinois, addressed an opening meeting on the public health programme of his state. This was the only evening meeting.

Wednesday morning's general meeting dealt with Cancer of the Cervix. The main discussion was between the operative treatment championed by Joseph Vincent Meigs, Boston; and the X-ray and radium treatment favored by Herbert E. Schmitz, Chicago. This was another excellent presentation. In the afternoon Jensen, of St. Louis, discussed the heart in pregnancy; Jameson, of Saranac Lake, spoke on the management of pregnancy in the tuberculous woman; and Priscilla White, of Boston, on pregnancy complicating diabetics. She believes that in severe cases of diabetes there is hormonal imbalance, and to correct this she gives massive doses of stilbesterol and progesterone. The results as stated by her were

impressive. The keenest interest was taken in her talk, and many questions were fired at her—in the time allowed for discussion. Following this Emil Novak, of Baltimore, gave a very clear talk on Ovarian tumors which led to a spirited discussion. He is an excellent teacher.

The general session on Thursday morning with Edward Schumann, Philadelphia, as Moderator was on Cesarean Section. M. E. Davis presented the claims of the low or cervical section favored by the Chicago Lying-in group; E. D. Plass spoke of possible abuses; W. B. Thompson, on the mortality of the operation; Schumann on the present status and Edward G. Waters on the extra-peritoneal section. The whole discussion was very satisfying.

In the afternoon my wife and I played hookey. The wife of a prominent St. Louis physician drove us through the 1300 acre Forest Park. We saw the excellent zoo, and the outstanding performance of lions and tigers in one amphitheatre and of the chimpanzees in another.

On Friday morning I visited the St. Louis Maternity, the teaching hospital of Washington University Medical School. The resident in charge was keenly interested in caudal anaesthesia and saddle-block spinal anaesthesia and showed me his register of cases so treated. One of the internes on duty came from Toronto. The superintendent of nurses was very kind to this Canadian visitor. Late in the afternoon we left the vast but well managed union railway terminal on the Zephyr Rocket Train. Saturday was spent in Minneapolis. On the trip from Minneapolis to Winnipeg, we travelled with delegates to the Odd Fellows and Rebekah's convention, an indication that in the case of scientific and fraternal groups there is considerable reciprocity between the two countries.

Notes in Passing

"Each infertile couple is an individual problem."

"Large doses of Vitamin B and Liver Concen-

trate have been successful in some cases of lowered sperm count."

"In general anaesthesia, oxygen should be used before the lack is evident."

"The foetus lives in a state of relative anoxia."

"Intravenous sodium pentothal is not transferred to the foetus for 10-12 minutes."

"In sub-emetic doses—gr. 1/50 to gr. 1/100 Apomorphine by the intravenous route reduces excitement."

"95% of human suffering is mental."

"Pregnancy is often a precipitating event in the production of a psychosis."

"Character formation is complete at the sixth year."

"Symptoms are only the headlines."

"In selected cases—early patients, young, lean, with normal blood chemistry—surgical treatment of cancer of the cervix is more comfortable."

"Diagnosis by vaginal smear is more accurate than biopsy in early cases of cancer of the cervix."

"The maximum of heart changes in pregnancy occurs at 36 weeks, in the last month the changes decrease."

"In cardiac decompensation the trend at present is to limit caesarean section."

"Routine X-ray of the chest is as important as the Wasserman."

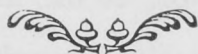
"The incidence of caesarean section should not be more than 3 or 4% in general hospitals and not more than 5% in special hospitals."

"The deadline for decision as to procedure in labour is 24 hours, and or ruptured membranes."

"Drain very fat people after caesarean section."

"In extra peritoneal caesarean section drain for 24-48 hours, and the bladder for 48 hours."

"Examination in a case of sterility should include a careful history, complete blood count, basal metabolic rate, basal body temperature, endometrial biopsy, vaginal smear."





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PAEDIATRICS

Edited by S. Israels, M.D.

Cerebral Damage in Infants and in Children

Some Observations on Its Causes and the Possibilities of Its Prevention

Harold K. Faber
San Francisco

Am. J. Dis. Child., 74: 1, P. 1-10, July, 1947

This address before the American Pediatric Society in May, 1947, deals with cases of mental deficiency, spastic paralysis, epilepsy, and other neurological disorders in which an abnormal pneumo-encephalogram was seen.

Although a good percentage of mental deficiency at the moron level is due to hereditary defects, nevertheless a large number are due to extrinsic causes operating before, during, or after birth. In the past the tendency has been to focus attention on the labour itself and think too much in terms of hemorrhage and too little in terms of anoxia.

The material for this study was 99 cases, all with cerebral atrophy, presumably of extrinsic origin. Mental deficiency was noted in 74%, spastic paralysis in 43% and convulsive seizures were present in 48%.

Prenatal episodes accounted for 35% of the disorders. These episodes included placental separation, toxemia, oversize infant, premature rupture of membranes, maternal trauma, Rh incompatibility, attempted abortion, infectious diseases, etc. Placental separation is the biggest prenatal factor. It leads to anoxia.

Paranatal factors can be listed as overuse of anaesthesia, sedation, oxytocics; abnormal labour, as prolonged, dry, precipitate. In this field, prevention is of some importance. This group represents 40% of the causes of brain injury in the group of 99 cases. This group will include the intracranial hemorrhage and anoxia due to anaesthesia. In the anoxic group direct laryngoscopy to clear an airway and the liberal administration of oxygen are of definite value.

Postnatal influences accounted for 25% of the cases studied. Infection was the main cause in this group. Five cases followed pertussis. Trauma is a less common cause in this group.

It is the author's opinion that better obstetrics and better pediatrics can prevent a considerable number of disasters if present knowledge is applied.

Sydney Israels, M.D.

Asymmetric Spastic Infantile Cerebral Palsy

A Clinical Study of Its Causation

John McGovern and Herman Yannet
Southbury, Conn.

From the Southbury Training School, Southbury, Conn., and the Department of Pediatrics, Yale Medical School, New Haven, Conn.

Am. J. Dis. Child., Vol. 74, No. 2: 121-129, August, 1947

Infantile spastic cerebral palsy refers to the group of spastic motor defects recognized at birth or soon after, or developing in the early years of life, and due to abnormalities of the brain. They fall into the following etiological categories: (1) Developmental anomalies, genetically determined; (2) Cerebral trauma at birth (3) Cerebral degenerations, and (4) Acquired post-natal cerebral anomalies. They also fall into 2 clinical groups, (a) Symmetrical palsies, including diplegia and paraplegias and (b) Asymmetric palsies: haemiplegias, monoplegias, triplegias or quadriplegias. Whereas older writers gave great stress to the birth injuries of cerebral haemorrhage, asphyxia and circulatory interference as a cause of spastic cerebral palsy, more recent writings favor developmental anomalies as the cause. At present the prevailing feeling is that symmetric involvement is likely due to developmental defect and asymmetric palsies are due to birth injury.

The present paper deals with 127 cases of cerebral spastic paralysis, 68 of which were asymmetric.

Criteria for birth trauma were abnormal, prolonged, or precipitate labour and immediate post-natal stormy course with signs of nervous system injury.

In summarizing the etiology of the asymmetric groups, birth trauma accounted for 18% of the total, infections for 16%, Rh isoimmunization 20%, brain tumor 1%, and 54% were due to unrecognized causes.

Further, an attempt was made to see if the clinical picture could differentiate the cases of birth trauma. These cases usually were first born, had younger mothers, had a smaller head size, and the tendency for haemiplegia to involve the left side.

Previous papers dealing with the etiology of spastic cerebral palsies failed to divide them into separate groups. This paper illustrates that etiologically these groups are different, e.g. the diagnosis of unknown causation was made in 30% of quadriplegia, 67% of haemiplegia, and 100% of diplegia, while 35% of quadriplegia are due to Rh isoimmunization.

The data indicate the importance of prenatal factors in cerebral defects leading to asymmetric palsies.

S. Israels, M.D.

Etiology of Mongolism, Epidemiologic and Teratologic Implications

Theodore H. Ingalls

Boston, Mass.

Dept. of Epidemiology, Harvard School of Public Health, and the Dept. of Pediatrics, Harvard Medical School
Am. J. Dis. Child, 74: 147-165, August, 1947

The author presents evidence to support the conclusion that Mongolism originates between the 6th and 9th week of foetal life. His study further indicates that the causative agents related to Mongolism are relatively numerous and that the changes affected in the placental circulation by these agents are limited in number and exert their action on the embryo at about the 8th week of gestation.

Epidemiologic implications show an association between Mongolism and relatively advanced age of the mother. Also significant are gestational haemorrhage, threatened abortion, and disorders of the uterus. Haemorrhage tended to occur about the time the 2nd period was due. Intercurrent infection about the 2nd month of pregnancy was considered significant. Three cases of maternal rubella are described in support of this evidence. A salient epidemiological feature in the association of Mongolism with uterine or systemic disease present at about the end of the 2nd month.

The author gives ample teratological evidence that the times of origin of the embryological arrests which characterize Mongolism synchronize at about the 8th week of gestation. Anoxia following haemorrhage at the 2nd month of gestation and mechanical disorders of the uterus associated with advancing years and parity are factors supported

by experimental and clinical teratological demonstrations.

B. Shuman

Results of Treatment of Recurrent Convulsive Attacks of Epilepsy

Haddow M. Keith

Rochester, Minn.

Department of Pediatrics, the Mayo Clinic
Am. J. Dis. Child., Vol. 74, No. 2: 140-146, August, 1947

The author reviews the relative value of the various methods of treatment of epilepsy other than surgical. Two groups are studied. Group I consisting of consecutive patients observed for a period from 4 to 5 years, were treated by ketogenic diet alone, ketogenic diet with diphenylhydantoin sodium and/or phenobarbital, phenobarbital alone, diphenylhydantoin sodium alone, or the last two drugs combined. The 2nd group studied was given ketogenic diet therapy and was followed for a period from 4 to 22 years.

Those of Group I receiving the ketogenic diet alone or with the drugs produced 27% of cases free of attacks for periods of from 1 to 5 years. Of all other treated cases only 12% were free. Phenobarbital resulted in a higher number of improvements as compared to diphenylhydantoin sodium. 24% of those receiving the latter drug had toxic reactions.

In Group II it was found that by means of the ketogenic diet, 53.7% of cases were influenced favorably. Of these, 35.3% remained well during periods from 4 to 22 years. Grand mal responded to the treatment best, petit mal nearly as well, and the combined condition less favorably, both as to freedom from attacks and improvement of cases. Of 29 children born to 20 cases of Group II, not one child has been observed to have convulsions of any sort.

B. Shuman

Treatment of Eye Muscle Imbalance at Children's Hospital Orthoptic Clinic

From February 1, 1948, Miss Anne Binning, of Croydon England, will be assistant orthoptist at the Clinic. Miss Binning trained at the Central London Ophthalmic Hospital and at Moorfields, and passed the examination set by the Orthoptic Board in July, 1947.

With this addition to the Clinic, it will now be possible to accept for treatment of eye muscle imbalance, a limited number of adult patients.

Wallace Grant, M.D.,
Superintendent.

Medico-Historical

Mrs. Mapp, the Bone-Setter

'Died last week, at her lodgings, near the Seven Dials, the much-talked of Mrs. Mapp, the bone-setter, so miserably poor, that the parish was obliged to bury her,' . . . London Daily Post, 22nd December, 1737.

The subject of this melancholy obituary notice was for a time the object of popular wonder and enthusiasm. The daughter of a country bone-setter, she had, after wandering about from place to place, settled herself at Epsom, where she soon became famed for wonder-working cures—cures apparently effected more by boldness and personal strength than skill. She married a mercer's servant, but the match seems to have been an unfortunate one, for the Grub-Street Journal of April 19, 1736, says: 'We hear that the husband of Mrs. Mapp, the famous bone-setter at Epsom, ran away from her last week, taking with him upwards of a hundred guineas, and such other portable things as lay next to his hand. Several letters from Epsom mention that the footman, whom the fair bone-setter married the week before, had taken a sudden journey from thence with what money his wife had earned and that her concern at first was very great, but as soon as the surprise was over, she grew gay; and seems to think the money well disposed of, as it was like to rid her of a husband.' He must have been a bold man to marry her, and still bolder to have ventured to incur her wrath, if her portrait does her justice—a more ill-favoured, or a stronger-framed woman, it would have been difficult to find.

Her professional success, however, must have gone far to solace her for matrimonial failure. Besides driving a profitable trade at home, she used to drive to town once a week, in a coach-and-four, and return again bearing away the crutches of her patients as trophies of honour. She held her levees at the Grecian Coffee-house, where she operated successfully upon a niece of Sir Hans Sloane. The same day, she straightened the body of a man whose back had stuck out two inches for nine years; and a gentleman who went into the house with one shoe-heel six inches high, came out again cured of a lameness of twenty years standing, and with both his legs of equal length. She was not always so successful. One Thomas Barber, tallow-chandler, of Saffron Hill, thought proper to issue the following warning to her would-be patients:

"Whereas it has been industriously (I wish I could say truly) reported that I had found great benefit from a certain female bone-setter's performance, and that it was from a want of resolu-

tion to undergo the operation that I did not meet with a perfect cure;—This is to give notice, that any persons afflicted with lameness (who are willing to know what good and harm others may receive, before they venture on desperate measures themselves), will be welcome any morning to see the dressing of my leg, which was sound before the operation, and they will then be able to judge of the performance, and to whom I owe my present unhappy confinement to my bed and chair."

The cure of Sir Hans Sloane's niece made Mrs. Mapp the town-talk, and if it was only known that she intended to make one of the audience, the theatre favoured with her presence was sure to be crowded to excess. A comedy was announced at the Lincoln's Inn Fields Theatre, called *The Husband's Relief, or The Female Bone-setter and the Worm-doctor*. Mrs. Mapp attended the first night, and was gratified at hearing a song in her praise, of which we give two verses as a specimen:

'You surgeons of London who puzzle your pates,
To ride in your coaches and purchase estates;
Give over for shame, for your pride has a fall,
And the doctress of Epsom has outdone you all.
Dame Nature has given her a doctor's degree,
She gets all the patients and pockets the fee;
So if you don't instantly prove it a cheat,
She'll loll in a chariot whilst you walk in the street.'

She seems to have been accompanied on this occasion by two noted quacks—Ward the worm doctor, and Taylor the oculist. A rhymster in the Grub-street Journal, alluding to this strange conjunction, says:

'While Mapp to th' actors shewed a kind regard,
On one side sat Taylor, on th' other side Ward,
When their mock persons of the drama came.
Both Ward and Taylor thought it hurt their game.
Wondering how Mapp could in good-humour be—
Zounds cries the manly dame, it hurts not me,
Quacks, without art, may either blind or kill,
But demonstration shows that mine is skill.'

Mrs. Mapp soon afterwards removed from Epsom to Pall Mall, but she did not forget her country friends, she gave a plate of ten guineas to be run for at Epsom, and went to see the race. Singularly enough, the first heat was won by a mare called "Mrs. Mapp," which so delighted the doctress, that she gave the jockey a guinea, and promised to make it a hundred if he won the plate, but to his chagrin he failed to do so. The fair bone setter's career was a brief one. In 1736 she was at the height of her prosperity, and at the end of 1737, she died in the miserable circumstances set forth in our opening paragraph.

"The Book of Days," Chambers.



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BOOK REVIEW

Surgery of the Ambulatory Patient. By L. Kraeer Ferguson, A.B., M.D., F.A.C.S., 2nd ed., 932 pp., \$12.50. J. B. Lippincott Co., Philadelphia, 1947.

This well-written and extremely practical book is a welcome addition to the library of student, general practitioner and specialist alike. The author, drawing on a wide experience in outpatient clinics, presents an integrated picture of office surgery, diagnosis, treatment and equipment needed. The book is divided into three parts. Part I presents a more or less general discussion of supplies, preparation for and conduct of minor operations, and typical lesions including their cause, course and aftercare. A separate chapter is devoted to anaesthesia with excellent instructions regarding how and where to produce procaine field-block. Part II presents a systematic and well-illustrated account of those common surgical lesions which are met with in everyday practice and which may be treated in ambulatory patients. Anatomy, etiology, diagnosis and accepted methods of treatment are each discussed in turn. The author makes frequent reference to the value of procaine infiltration in the treatment of fibrositis, traumatic injuries of muscles and ligaments, etc. The therapeutic value of penicillin and the sulpha drugs as an aid in the surgery of ambulatory patients is fully discussed. Included are excellent chapters on the surgery of the hand and of varicose veins. Part III is contributed by Dr. Louis Kaplan. It is a concise resume of dislocations and fractures and their treatment, and is excellent for quick reference.—L. G.



Diagnosis in Daily Practice is a unique volume in that it presents a completely new approach to the problem of diagnosis. What the authors had in mind is best shown by an excerpt from their Preface:

"The practicing physician is primarily responsible for the management of those illnesses which are the major causes of disability and death. He likewise should hold himself accountable for the prompt recognition and handling of the predisabling phases of such diseases in order to prevent more drastic complications. To bring to the foreground of medical consciousness the major causes of death and disability in the United States a list of common diseases has been prepared from the vital statistics of the Census Bureau, the morbidity statistics of the National Health Survey, and other sources. This list, together with a small number of precursor states not disabling in them-

selves (approximately 200 diseases in all) appears on the lining pages in the front of the book.

"The first objective of the authors is twofold: (1) to emphasize in terms of prevention and salvage the importance of prompt recognition of these diseases and (2) to evaluate the clinical findings which serve as indications for further diagnostic tests for the purpose of confirming the presence of the diseases' early or presymptomatic stages. The second objective is (1) to provide a compendium of these clinical and diagnostic findings and (2) to outline a routine examination which will enable the physician to recognize and differentiate them. A third objective is to point out the less common diseases to which these findings also lead and thus to provide a more comprehensive basis for differential diagnosis.

In Chapter 2, Part I, will be found a survey of mortality and morbidity statistics, forming the basis for the selection of the major diseases discussed in the text. The etiologic classification of these diseases and their regional distributions in the body (which account for the diagnostic abnormalities which they produce) are discussed in Chapter 3, and a routine diagnostic survey is formulated which utilizes as its basis procedures for the elicitation of these abnormalities.

This examination, which has been derived from an analysis of the most prevalent early findings in each of the major diseases, comprises 45 historical, physical, and laboratory findings. These enable the physician to suspect or to rule out the presence of all the common diseases with a degree of accuracy commensurate with the present achievements of medical science. The abnormalities to be sought on routine examination, together with supplementary procedures to be undertaken in the presence of positive routine findings, appear on the lining pages at the end of the book with references to the pages on which they are amplified or discussed.

In the chapters of Parts II, III, and IV, diagnostic abnormalities are considered individually from standpoints of their pathologic physiology, the procedures required for their demonstration, and their diagnostic implications. Tabulations for each abnormality relate it to the differential diagnosis of the major disease discussed in Part V, and also to the rarer diseases.

The chapters of Part V contain a discussion of the clinical features of the major diseases and tables on their differential diagnosis setting forth the symptoms and signs to be elicited and the diagnostic procedures to be undertaken in arriving at a final diagnosis.

The book is practically an encyclopedia of diagnosis. Each symptom and sign is considered in such a way as to lead to the diagnosis of the individual case under consideration. It covers 719 pages and is profusely illustrated. In addition to 360 figures there are nearly 50 line drawings and 93 color illustrations on 12 plates. There are 104 tables of differential diagnosis. It is less a book that one would read through, though that would be profitable, than one to which frequent

reference will be made in the study of cases.

Diagnosis in Daily Practice: An Office Routine Based on the Various Incidence of Various Diseases: by Benjamin V. White, M.D., Assistant Clinical Professor of Medicine, Yale University School of Medicine, and Charles F. Geschickter, M.D., Professor of Pathology, Georgetown University Medical School: J. B. Lippincott Company, Montreal. \$17.00.

Medical Library

Recent Accessions From October, 1946, to
October, 1947

(To be issued in parts in the Review)

Textbooks and Reference Textbooks

- Cushny, A. R. Pharmacology and therapeutics; 13th ed.
Lea and Febiger, 1947. 868 p.
Curtis, A. H. A textbook of gynecology; 5th ed. Saunders, 1946. 755 p.
Glaister, J. Medical jurisprudence and toxicology; 8th ed.
Livingstone, 1947. 691 p.
Hawk, P. B. Practical physiological chemistry; 12th ed.
Blakiston, (c1947). 1323 p.
Henderson, D. K. A textbook of psychiatry for students and practitioners; 6th ed.
Geoffrey Cumberlege. Oxford Univ. Press, (1946). 719 p.
Novak, E. Gynecological and obstetrical pathology, with clinical and endocrine relations 2d ed. Saunders, 1947. 570 p.
Potter, E. L. Rh. . . its relation to congenital hemolytic and to intragroup transfusion reactions.
Year Book Pub. Co., 1947. 344 p.
Walshe, F. M. R. Diseases of the nervous system; 5th ed.
Livingstone, 1947. 351 p.
Windle, W. F. Physiology of the fetus.
Saunders, (c1940). 249 p.

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- Bancroft, F. W. Surgical treatment of the motor-skeletal system.
Lippincott, (c1945). 2 v.
Brennemann, J. Practice of pediatrics.
W. F. Prior Co., 1937. 4 v.
Gould, G. M. Gould's medical dictionary; words and phrases generally used in medicine and the allied sciences . . . derivation; 5th rev. ed.
Blakiston, 1945. 1528 p.
Polyak, S. L. The human ear in anatomical transparencies.
Sonotone Corp., 1946. 136 p.

Toldt, C. An atlas of human anatomy for students and physicians; 2d ed.
Macmillan, 1928. (1944) 2 v.

General List

- Albee, F. H. Surgery of the spinal column.
Davis, 1945. 460 p.
American medical association. Council on food and nutrition. Handbook of nutrition; a symposium under . . . association.
American Medical Association, 1943. 568 p.
Aschner, B. Treatment of arthritis and rheumatism in general practice, particularly in women.
Froben, 1946. 340 p.
Association of official agricultural chemists. Official and tentative methods of analysis of the association of official agricultural chemists.
6th ed.
The Association, (1945). 932 p.
Babcock, W. W. Principles and practice of surgery.
Lea and Febiger, 1944. 1331 p.
Baldwin, E. J. Dynamic aspects of biochemistry.
Cambridge Univ. Pr., 1947. 457 p.
Bancroft, F. W. Surgical treatment of the soft tissues.
Lippincott, (1946). 520 p.
Beaumont, G. E. Recent advances in medicine.
12th ed.
Churchill, 1947. 422 p.
Benda, C. E. Mongolism and cretinism.
Grune and Stratton, 1946. 310 p.
Bishop, P. M. F. Gynaecological endocrinology for the practitioner.
Livingstone, 1946. 124 p.
Blacker, C. P. Neurosis and the mental health services.
Humphrey Milford, 1946. 218 p.
Block, R. J. The determination of amino acids; revised.
Burgess, (c1940). 56 p. Mimeoprint.
Bourney, V. The technical minutiae of extended myomectomy and ovarian cystectomy.
Cassell, 1946. 282 p.
Bonnin, J. G. A complete outline of fractures including fractures of the skull; 2d ed., revised and enlarged.
Heinemann, 1946. 658 p.

(To be Continued)

ANAESTHESIOLOGY

Edited by D. G. Revell, M.D., Anaesthetist, Children's Hospital, Winnipeg
and Fred A. Walton, M.D., Anaesthetist, Winnipeg General Hospital

Anaesthesia in Caesarean Section

Dr. H. C. Hutchison

Choosing an anaesthetic for Caesarean section involves all the factors normally considered in major surgery plus the extremely important one of the infant's well-being. Local, spinal and general anaesthesia should therefore be considered and whichever is the most suitable should be picked.

In the contemplation of giving an anaesthetic for caesarean section one of the first things to decide is what preoperative medication should be used. It is, however, well to inquire first as to what has already been given to the patient, if labor has been going on for some time. On the other hand if the case is an elective one, it is likely that no sedatives have been given. With the first possibility, the amount of medication to be administered for the operation may have to be very markedly reduced. Most of you will agree that morphine should be ruled out because of foetal respiratory depression. It is quite possible that the same would apply to Demerol. Atropine, on the other hand, is almost a **must**, especially if general anaesthesia is used. It is a considerable help in drying up secretions and also to a certain extent acts on the Vagus nerve. One of the least harmful and most useful drugs is Nembutal in small dosage. It seems to remove a portion of the patient's apprehension and combined with atropine, works well.

Induction to a general anaesthetic may be done in several ways and perhaps the three most common are Pentothal, Ethyl Chloride and Nitrous Oxide. Both Pentothal and Ethyl Chloride might be ruled out and not used except in cases where other drugs are lacking, for they both are respiratory depressants. This leaves Nitrous Oxide as the inducing agent of choice.

Of the three types of anaesthesia mentioned, let us first consider Local Anaesthesia. This is by far the safest, even for the most toxic patient but against its general use is the patient's apprehension, the sensation of touch which remains, and also the very evident pain if it is not entirely successful, and the unpleasantness of a number of needle pricks.

Spinal anaesthesia generally gives good results but on occasion one may here run into trouble. Should the patient be apprehensive, until the baby is delivered little can be done about it. One hazard is always present with spinal delivery and that is a marked fall in blood

pressure, lasting, it is true, for a few minutes only (as low as 70 systolic) and this even with a minimum effectual dose. What the result of a moderately profuse hemorrhage would be I have yet to see. It is an excellent anaesthetic for the foetus, but a slightly risky one for the mother. It should, I feel, be kept for cases where the baby is in distress, for example where there is a partially separated placenta, or where the mother's condition necessitates it. The textbook of Dr. Lundy, of the Mayo Clinic, on Anaesthesia does not even quote the use of spinal anaesthesia for Caesarean Section.

General anaesthesia is perhaps the safest of all anaesthetics for Caesarean Section. Ether is good though it is somewhat unpleasant and best of all, at least twenty minutes will elapse between the time of induction and when any considerable amount of the agent passes the placental barrier. Cyclopropane is much more pleasant and has fewer sequelae and here, too, at least fifteen minutes will elapse before the agent passes the placental barrier.

To recapitulate the foregoing—Use Local Anaesthesia for very toxic or very poor risks. Use Spinal when the baby is in distress, and use General Anaesthesia and preferably Cyclopropane (with a nitrous oxide induction) for all other cases.

Since December, 1944, there have been done one hundred and sixteen Caesarean Sections in Grace Hospital. We have had one death within twenty-four hours of operation and that was a cardio-renal case who died twelve hours after she had left the operating theatre, and whose reason for being delivered by section was to have her avoid the ordeal of labor. I feel that in this small group of cases, some of the success is due in part to the choice of anaesthetic.

Gillies, John, Choice of Anaesthesia for Operation on Hernia. Practitioner, November, 1947. Vol. 159, p. 381.

The elective operation for inguinal hernia does not present the same technical anaesthetic difficulties as do operations on the thorax or abdomen. Respiration, circulation and metabolic processes are not disturbed by the mechanical pathology of hernia. For the less experienced or occasional anaesthetist ether anaesthesia by the open or partial rebreathing technique is recommended. The post-operative complications incidence will likely compare favorably with those of the specialist using more complicated techniques. However, the case with strangulation and intestinal obstruc-

tion or the large irreducible hernia requiring longer plastic repair needs expert anaesthesia. The elderly patient should be managed by local infiltration analgesia or be under the care of an experienced anaesthetist.

The high incidence of post-herniorrhaphy complications following any form of anaesthesia requires that we study our methods and techniques with a view to selection and attentive administration. The routine use of spinal analgesia does not lower the incidence of post-operative chest complications. It is actually higher than after ether and other general anaesthetic agents. Atelectasis is surprisingly common following hernia operations, regardless of agent or technique used, occurring most frequently on the same side as the operation. Bronchitis may or may not supervene. The severity of chest complications is usually greater after ether on account of reaction to its irritation. The primary cause of atelectasis after hernia operation is post-operative hypoventilation, rather than the particular agent or technique. The best results in a series studied were obtained with light basal narcosis (with pentothal) and local infiltration and breathing exercises before and after operation.

Pain in the wound, inhibiting early movement about in the bed and normal respiration, is the most important factor in initiating atelectasis. Hypoventilation must be avoided both during and after operation. Acute respiratory or chronic bronchial congestion due to smoking, and plugging of the bronchioles by sticky mucus increase greatly the likelihood of pulmonary complications. An irritant anaesthetic agent promotes hypersecretion. Unnecessary or prolonged respiratory depression conduces to atelectasis even during operation.

The early return of the cough reflex is very important to clear obstructing secretion before the gases beyond the plugs are absorbed rendering effective coughing impossible. Absorption of ether, nitrous oxide, cyclopropane and oxygen from beyond plugs takes place very rapidly, even during operation, but the most likely period of atelectasis development is during the first 48 hours after operation during which period the pain is most disturbing and inhibiting to normal depth of breathing. Once a part of the lung becomes airless re-entry of air can not be effected except by bronchoscopic suction of the obstructing mucus.

In faints the operation is relatively short and simple, little anaesthetic is necessary and the patient does not remain immobile afterwards as older patients do, and crying is naturally incompatible with hypoventilation. Elderly subjects, on the other hand, may have deficient oxygenation capacity due to chronic infection, emphysema,

asthma, or poor circulation due to myocardial weakness. Respiratory vital capacity is reduced after operation, thrombosis and pulmonary embolism are likely as a result of immobilization in bed. Fatal embolism is more common after herniorrhaphy than after any other operation. The length of operation is more important in older patients. The incidence of venous thrombosis is twice as great after bilateral repair.

To reduce the incidence of post-operative complications in elective cases we must regard acute respiratory infection as an absolute contraindication to operation. Patients who smoke much should be required to stop smoking for several days to allow congestion and hypersecretion to subside and airways to become cleaned by intentional coughing. If vital capacity is diminished deep breathing exercise will increase it, especially post-operatively. Resting must not be overdone, the patient being required to be up and about coughing and blowing to clear the bronchial tree until premedication time. Use light premedication only. Regional analgesia the choice, with light basal pentothal. Both somatic and autonomic nerves are blocked permitting complete relaxation and there is no depression of respiration or circulation. Hypoventilation may occur as soon as pain is experienced after operation but deep breathing exercises may be commenced earlier than after a general anaesthetic alone. Regional anaesthesia is the only choice for the elderly patient especially if strangulation is suspected. The lightest possible premedication and limiting the basal pentothal to under 0.5 Gm. are suggested.

Where general anaesthesia is expedient, again use only light premedication, including atropine, use anaesthesia just deep enough to relax and obtund traction reflexes. Withhold post-operative analgesic until patient complains and then give sedative intravenously with controlled dosage. Where ether is used relative overdosage is very easy and is to be avoided. The traditional safe reputation of ether should not encourage laxity in its use. When pentothal and cyclopropane are used avoid depression. Do not use ether for long operations especially on elderly patients. Do not attempt to use pentothal alone but combine it with Nitrous oxide blown over trichlorethylene. This does not cause vasodilation and is not followed by hang-over effect.

In strangulation and intestinal obstruction the management is somewhat critical. If patient is vomiting a stomach tube should be passed before induction and retained in place during operation. This is essential and likely adequate unless endotracheal intubation is done. Use extreme caution where pentothal is used, to watch for silent regurgitation past the stomach tube with possible laryngospasm and aspiration.

The proper control of post-operative sedation is as important as the correct management of the anaesthetic. The anaesthetist must take an interest in this as it is an integral part of the anaesthetic procedure. Relieve pain—permit sleep—but avoid medullary depression. Subcutaneous morphine is unsatisfactory as the rate of absorption varies, the effect is unpredictable and overdosage is very easy. Morphine given intravenously in controll-

able dosage adequate to relieve pain and permit two or three-hour periods of rest is suggested. Between these periods the patient is allowed to remain awake and active, able to cough and carry out deep breathing, etc.

Nine references, all British and American. As the reviewer has had the privilege of meeting and watching Dr. Gillies work it is a pleasure to renew his acquaintance in this paper. D. G. R.

Hospital Clinical Reports

Reported by J. M. Whiteford, M.D.

Winnipeg General Hospital

A Case of Myasthenia Gravis

Dr. L. G. Bell and Dr. M. B. Perrin

This is the case of a woman, aged 31, who in July, 1947, was delivered of her first child. During the 7th month of her pregnancy she developed weakness of the muscles of chewing and swallowing and also of her arms. Several days after delivery she had marked difficulty in breathing, and the weakness of the arms, neck and throat muscles became more marked; there was marked ptosis but no other eye symptoms. A diagnosis of myasthenia gravis was made and treatment with oral prostigmine was begun. At this time she required 15 mgms. o.h. 3; this was subsequently increased to a daily total of 300 mgms. by mouth and because of difficulty with food she was also given 1 mgm. by hypo 20 minutes before each meal. At about this time she was first admitted to the Winnipeg General Hospital, and even on this dosage it was felt that she was becoming worse, since arm movements, talking and eating were becoming progressively more difficult.

Physical examination at this time revealed a typical myasthenia reaction in all involved muscles with characteristic indistinct mumbling voice. Congenital nystagmus was present. X-ray of the chest showed a swelling of the superior anterior mediastinum. On the basis of physical and X-ray findings, a diagnosis of tumor of the thymus gland was made, and on October 2, 1947, Dr. M. B. Perrin removed it. Post-operatively for four days her condition remained much the same, requiring the same large doses of prostigmine to control muscle weakness. Subsequently she showed a steady improvement and is now relatively comfortable on 15 mgms. of prostigmine three times a day before meals.

The following points of management of such cases should be emphasized:

1. This condition is frequently associated with Grave's disease.
2. These patients sometimes die suddenly with

complete respiratory paralysis, and each patient should carry a syringe and ampoule of prostigmine and should be able to give it to himself or herself in an emergency.

3. The most sensitive muscle group for diagnosis of this disease is that of the swallowing muscles, since if the disease is present difficulty in swallowing is almost always present, though occasionally it may affect only one muscle. In using prostigmine in a therapeutic test for diagnosis, at least 1½ mgms. should be used, as the characteristic improvement may not result from smaller doses.

4. The therapeutic effect of prostigmine was first described by Mary Walker in 1935. Its mode of action is to inhibit choline-esterase, thus permitting the normal function of acetyl-choline in synaptic transmission. This reaction appears to be quantitative, and therefore in each case the dosage of prostigmine must be accurately balanced against the choline-esterase level. Ephedrine has an effect similar to that of prostigmine but is very feeble by comparison.

5. The effect of thymectomy cannot be predicted, even in the presence of definite tumor, and in assessing satisfactory post-operative results it should be borne in mind that these cases are prone to dramatic remission of symptoms. Surgical treatment is, however, the treatment of choice in advanced cases, such as this, who are regressing even on large doses of prostigmine.

Dr. Childe presented the X-rays, reporting a discrete mass in the anterior superior mediastinum without evidence of infiltration into adjacent structures. He noted that these tumors may be quite small and requested that requisitions for X-ray studies of possible thymoma be carefully labelled; otherwise the tumor may be missed.

Dr. Perrin

The treatment of myasthenia gravis by surgery of the thymus gland has been greatly enhanced due to the recent work of Blalock and Clagett in America and Keynes in England. Approximately 50% of the patients with myasthenia gravis show some evidence of hyperplasia of the thymus, many

of these with true tumor formation. In 32 cases operated on at the Mayo Clinic, 15 showed tumor while the remainder all showed enlargement with or without hyperplasia. In a larger series of 129 cases treated by surgery, 17 felt well post-operatively, 24 showed considerable improvement, 27 showed moderate improvement, 21 slight improvement—the remainder were unimproved or died.

Pre-operative preparation includes adequate medical treatment with prostigmine, etc., as outlined before, with penicillin as a prophylactic against chest and other infections.

Dr. Perrin outlined the operative procedure in which he used a sternum splitting approach. Prostigmine 1 mgm. by hypo was given during the operation.

Post-operatively prostigmine was continued in adequate dosage, and to guard against respiratory difficulty suction of the pharynx was carried out repeatedly; oxygen inhalations were given as required and preparations were made for bronchoscopy if necessary also a respirator was ready for use in the event of sudden respiratory collapse. It should be noted that once a tumor of the thymus has developed invasive characteristics it can no longer be treated satisfactorily by surgery.

The pathological report was as follows: Both lobes of the thymus gland. In the left lobe is an encapsulated tumor measuring 6 cms. in diameter and of normal gross appearance. Microscopic examination show diffuse sheets of epithelial cells in a lymphoid stroma.

Dr. D. C. Aikenhead

This patient showed several points of interest. No pre-operative morphine was given in consideration of the already weakened respiratory muscles; atropine was given in the usual dosage. An intratracheal tube was very easily inserted, the effect of the myasthenia gravis on the laryngeal muscles being similar to that induced by curare. Cyclopropane was the agent used; this permitted a high concentration of oxygen to be maintained. Frequent suction was necessary and at the end of the operation suction of the trachea, larynx, etc., was carried out.

Dr. Doupe reviewed the history of clinical and pharmacological research, leading up to the use of prostigmine as a therapeutic agent in myasthenia gravis and emphasized this as a good example of the value of research in expanding the field of fundamental knowledge.

A Case of Fat Embolism

Dr. E. S. James and Dr. P. Decter

The case was presented of a woman who on October 23rd was struck by a car and after a delay of approximately an hour was admitted to the

Winnipeg General Hospital. At that time she was unconscious but showed a low blood pressure and other evidence of shock. There was no evidence of injury to chest or abdomen. Supportive measures, including intravenous plasma and blood were instituted. X-ray studies revealed fracture of both tibiae and fibulae, compound on the right side, and of both wrists. Emergency splints were applied. A flat plate of the abdomen taken at noon showed no abnormality but during the afternoon the patient began to vomit. Following that a second flat plate showed a tremendously dilated stomach; this was easily decompressed by insertion of a Levine tube. No further vomiting occurred.

On October 26th the patient developed difficulty in breathing and became semi-comatose. Casts were applied to legs and arms, and on the following day a left hemiplegia developed and plantar stimulation produced Babinski sign on both sides. A chest plate at this time showed diffuse haziness throughout both lung fields. Examination of ocular fundi was negative. The patient subsequently improved and is now relatively well. The only remaining neurological abnormality is a slight lack of co-ordination in the use of the left hand and arm. X-ray of the chest is now clear.

Dr. Decter reviewed the history of investigation and recognition of fat embolism as follows:

1669—Lower observed the results of intravenous administration of milk in dogs. No description of ante-mortem or post-mortem results.

1821—Magendie described the signs and symptoms following the intravenous administration of oil in dogs.

1861—Zenker first described fat embolism in humans, reporting the case of a laborer who, after death following a crush injury, was found to have liquid fat in the lung capillaries.

1886—Scriba again described the symptoms and signs of fat embolism in humans and was the first to record the appearance of fat globules in the urine of these patients.

Warthin in 1913 and Vance in 1931 have each prepared extensive reviews of the literature on this subject and in 1946 Warren, of the coroner's department in New York City, analyzed a hundred cases of traumatic origin.

Etiology

A. Traumatic.

(1) Bones—fracture, jarring (as in injury to amputation stumps) orthopedic surgery.

(2) Other tissues—crush injuries or surgery.

B. Non-traumatic. Rare cases of fat embolism have been reported in such conditions as child birth, hydrocyanic acid poisoning, etc.

The incidence is reported as 8 men to 1 woman and is very rare in children. The mode of production is undecided. It was originally considered that due to trauma, usually of bones, intramedullary fat was allowed to enter the larger veins and obtain access to the general circulation. On a quantitative basis this explanation does not appear feasible since the amount of fat required to produce an embolus is in excess of the total amount in any single long bone. A second theory postulates that a tissue extract liberated from damaged tissues enters the circulation and reduces the fats to the normal circulating state to gross globules.

Signs and Symptoms

Between the time of trauma and the appearance of symptoms there is usually a free period which varies from three hours to three days. Signs of fat embolism are generally pulmonary and/or cerebral: dyspnoea, rapid respiration, cyanosis, with X-rays showing generalized haziness in lung fields; productive cough is common and fat globules may be demonstrated in the sputum with appropriate strains. Cerebral symptoms are usually those of sudden coma and/or paralysis with delirium which may progress rapidly to death. Urinalysis may show fat globules and examination of ocular fundi may show fat emboli in the retinal vessels.

Pathology

Lungs show multiple small fat emboli in the smaller vessels. Following rupture of the alveolar membrane fat globules may also be apparent in alveoli and air passages. The brain shows similar emboli confined to the vessels of the white matter. Kidneys show fat emboli in the glomeruli and following rupture of the glomerular membrane globules of fat may be present in Bowman's capsule and the tubules.

Treatment

Treatment is generally preventive and supportive. Prevention includes the use of a tourniquet during all orthopedic operations and early immobilization of fractures with care in handling all tissues.

Acute dilatation of the stomach has not heretofore been reported as a complication of this condition.

Endometriosis

A Review of the Recent Literature

With recent years the condition known as endometriosis has been the object of much discussion and extensive investigative work. As a result of this growing interest, it is hoped that great strides will be made toward the more intelligent diagnosis and treatment of the condition. Perhaps no other disease of comparable frequency and severity has

so low a diagnostic index. There is a widespread assumption that the condition is the private property of the gynaecologist. This is unfortunate, because endometriosis like pregnancy is encountered by all physicians.

Etiology

Nothing concrete has been added to the etiology of endometriosis in the past few years. Novak¹ summarizes the theories of endometriosis as follows:

(1) Sampson's theory of transtubal regurgitation of menstrual blood;

(2) Schiller's celomic theory of aberrant endometrium developing as a result of abnormal differentiation changes in the germinal epithelium and various parts of the pelvic peritoneum which are embryologically derived from celomic epithelium;

(3) Halban's theory of lymphatic dissemination.

Sampson's theory is the most accepted today, but it may be stated that the histogenesis is probably not the same for all cases.

Incidence

Fallon² in his article makes this startling disclosure: "Endometriosis is a frequent, not a rare disease. In a recent test period, controlled to the extent that during it all the clinic's operations were done by one operator, there were among the female patients 78 cases of acute appendicitis, and 107 cases of microscopically verified endometriosis."

Haydon³ in his paper reports an incidence of 9.84 per cent covering the years 1934 to 1940 inclusive, with 4,500 gynaecologic operations performed. Various authors report the incidence as low as 2% and as high as 15%.

Age Group

By far the greatest number of reported cases fall in the age group 25 to 45 years. The youngest and oldest cases reported are 13 and 78 years, respectively. Thus, the disease is confined more or less to the years of ovarian activity.

Pathology

Endometriosis is divided into two types: (a) Internal, confined to the uterine cavity; and (b) External, anywhere except the uterine cavity. It is the external type which has attracted most attention, as treatment is so difficult.

Endometriosis is a growth of endometrical cells, cystologically benign. The most common lesion is the endometrial-walled cyst that menstruates into its own lumen. The invasion of the surrounding tissue by the cyst wall is opposed by fibrous tissue varying in degree with the individual. In the ovary there is least fibrous resistance, resulting in rapid enlargement, with either perforation or seepage of menstrual fluid. With periodical

swellings, new seepages and adhesions, there is built up the so-called "chocolate cyst," of the usual illustration. Generally, the pathology ranges from the so-called "blueberry spot," measuring a few millimetres in diameter with its surrounding tentacles of fibrosis, to the endometriotic ovary plastered to the broad ligament and any contiguous area with characteristic dense adhesions.

Endometriosis has been described in practically all pelvic organs. Laparotomy scars, the umbilicus, the small intestine, lymph nodes, and the lung are more rare sites. Sampson¹ reviews 16 cases of macroscopically and microscopically proven laparotomy scar endometriosis following bilateral salpingectomy or tubal sterilization followed by intentional or accidental ventral fixation of the uterus. "I was able to ascertain that the scar endometriosis was derived from the mucosa of a tubal stump by continuous invasion of 10 specimens." This is perhaps a feature of endometriosis that is not widely appreciated—the ability of cells to invade tissue.

Haydon³ describes the uterus, cul-de-sac, and ovaries as the sites of endometriosis in order of frequency. The associated pathological condition found accompanying reported cases of endometriosis are fibromyomas of the uterus (roughly 40% in most series), retroversion, and cervical erosion in order of incidence. Carcinoma of the corpus associated with endometriosis has been reported.

Diagnosis

Almost any symptom is possible in endometriosis because of the variety of sites in which the lesion may occur. A basic syndrome, however, can probably be identified in spite of all the adventitious symptoms. Fallon², after reviewing 200 articles and utilizing his own experience of 200 cases, sets forth this basic syndrome of three parts as follows:

(1) **Cardinal Symptoms**—Increasing dysmenorrhea is almost always present, provided the disease causes any symptoms. The pain may be a cramp or an ache, may be localized, or may radiate anywhere in the lower abdomen or pelvis. Its significance is in its relation to menstruation. The criterion of endometriotic pain is **increase**. The severity of the pain is no index of the extent of the lesion. By and large, pain is more consistent with peritoneal lesions than with those limited to the ovaries. Jarring of the pelvis from any cause, coitus, or defecation may increase the pain of endometriosis. The symptoms of menorrhagia or metrorrhagia debatable aids in making a diagnosis.

(2) **Pathognomonic Sign**—The pathognomonic sign is the hard, fixed, invading nodule of endometriosis. The characteristic feel of this structure is a matter of tactile memory and not to be learned

from print. In searching for the nodules, the combined rectal and vaginal examination is more rewarding. (Fallon states that, despite a normal pelvis, diagnosis should be made from history alone).

(3) **Specialized Susceptibility**—The occurrence of endometriosis is largely limited to one group of people—the ovulating, sexually dormant female, whether married or single. Haydon³ reports relative sterility of 53% in his series. Women with children, however, are just as susceptible to endometriosis.

That a woman has not had a baby recently, so for about five years, is the important point. Of 14 women out of 200 have been pregnant within five years before discovery of the disease.

The most practical item in diagnosis after increasing dysmenorrhoea is therefore considered to be a history of about five years of non-pregnancy preceding the disease.

Keene and Kimbrough⁵ set forth a symptom complex leading to the correct diagnosis:

1. Age—between 25 and menopause.
2. Sterility—absolute or relative.
3. Abnormal menses.
4. Dysmenorrhoea of the acquired type.
5. Dyspareunia.
6. Sacral backache.
7. Intermenstrual lower abdominal pain—worse at menses.
8. Pain in bladder or rectum bearing distinct relationship to the menses.

Treatment

Having made the diagnosis, the physician may well ask, "What now?" For indeed it is one of the most difficult gynecological problems the physician has to face. Surgery to date, is the only proven treatment for endometriosis. The surgery ranges in scope from conservative to radical. Most writers are in favor of conservative surgery which consists of extirpation of the individual lesions and only the diseased part of the ovary, with or without hysterectomy. This should be the initial treatment in the young patient who has years of potential child-bearing ahead of her. The ablation of the ovaries in a woman at or near the menopause presents no problem. Castration in any patient should probably be used only as a last resort in the treatment.

Haydon³, using conservative treatment, and correcting retrodisplacements when present, followed 291 patients over a period of 1 to 10 years. Of these, 257 had complete relief. Cashman⁶ in a series of 155 cases followed over 1 to 10 years, had 73% report complete relief. In this series, he performed hysterectomy with removal of diseased ovarian tissue only.

The use of methyl testosterone as an aid in the treatment of endometriosis was first reported by Wilson in 1940.

Hirst⁷ presents a series of 19 cases treated by methyl testosterone, reporting relief of pain in almost all cases. Apparently androgen was only an aid in relieving pain to delay surgery until a future date.

Even today too many patients suffering from endometriosis are probably being knifed or radiated into sexual oblivion by the most drastic of all female surgery—castration. A less radical and more efficacious form of treatment is indicated. Only a more complete understanding of the exciting or predisposing factors, including mechanical

and hormonal, can lead to the final answer of this problem.

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Deer Lodge Hospital

Reported by P. T. Green, M.D.

Clinico-Pathological Conference No. 25

Mr. R. D. S., White Male, Born 1881.

Admitted to Deer Lodge Hospital on January 3, 1945. Complaint: "Stroke" left side 5-6 weeks.

H.P.I.

While on the train to Transcona on the morning of December 1, 1944, felt something "funny" come over him. Shortly afterwards he noticed he couldn't talk correctly.

After the episode on the train he was unable to hold his fork properly in the left hand, no pain or tingling and was not cold but felt numb. Saw a physician who gave him some drops, 10 t.i.d. p.c. (probably pot. iodide).

About two weeks from the beginning of the symptoms the whole left arm was useless and was unable to dress himself. About this time his wife noticed the left side of his face was drawn up and he would drop a cigarette from his mouth. His speech was thickened at times.

About December 24, 1944, his left leg started to become useless.

Past Illness

Ulcerated stomach 12-14 years ago—had an operation.

Clot of blood on brain—40 years ago. Treated for hypertension—7 years ago.

Functional

Eyes—Uses glasses for reading.

Ears, Nose and Mouth—No loss of sensation in face or mouth. Has a certain amount of trouble in speaking once in a while—can't form words properly. No disturbance in taste.

Respiratory—Infrequent colds, no cough. No pain in chest and no dyspnoea.

Cardiovascular—No palpitation, pain or swelling of legs.

Gastrointestinal—No indigestion since operation for ulcer of stomach. Can eat anything. No diarrhoea or constipation. No loss of weight.

G.U.—No frequency or nocturia or dysuria.

Nervous—Complete loss of power in left side of face, left arm and leg.

Px.

An elderly male of about stated age, lying quietly in bed and unable to move the left side of his body.

Head and Neck: Pupils—Equal, react equally but slowly to 1 & a. Movements of eyes jerky but there is no nystagmus.

Ears—N.A.D.

Nose—There is deviation of septum to the left. No actual nasal obstruction.

Mouth—Edentulous. Tongue normal.

Neck—No enlarged glands.

Cranial Nerves—I, II, III, IV, VI, normal.

V—There is complete paralysis of the masticator muscles on the left. No loss of facial sensation.

VII—Facial muscles on left side are paralyzed. The whole left side of the face and the mouth droop.

IX—The uvula and anterior and posterior pillars seem to deviate to the left.

VII, X, XI and XII, normal.

The tongue does not deviate.

Chest—The anterior posterior diameter of the chest is increased and there is increased resonance over the praecordium—emphysema. There seems to be decreased movement of the left chest compared to the right. No dullness on percussion. Normal breath sounds.

Heart—Rate 72, regular, BP 126/90. No thrills or murmurs. Sounds distant.

Abdomen—There is a midline scar between xiphoid and umbilicus. No tenderness or masses. Liver and spleen not palpable.

Extremities—Left Arm: There is weakness of all muscles of the shoulder girdle but not complete paralysis. The forearm can be flexed on the elbow reasonably well, but not nearly as strongly as on the right. Extension of the forearm is done by the Pronator Teres, the extensors are gone. The supinator is paralyzed. Movements of the wrist and fingers are weak.

Left Leg: All muscle groups are weak compared to the right side but there is no absolute paresis.

The abdominal muscles are of equal strength on both sides.

Reflexes	Right	Left
Triceps	††	††
Biceps	††	†††
Brachiales	†	†
Abdominals	††	0
Cremasteric	††	††
Knee Jerk	†††	†††
Ankle Jerk	††	††
Plantars	√	√—Indefinite

January 10, 1945—

In bed, mentally confused—speech rather thick and he is confused in answering questions. The face is drawn to the right and he has paralysis of the left arm and leg. Pupils are small and eye grounds cannot be seen without dilating the pupils.

He has a good right hand grip but considerable spasm. He has no grip in the left hand.

He has an upgoing great toe left foot on Babinski's test.

The knee and ankle jerks are active and there is Kernig's sign on each but not pronounced and the neck is not stiff.

There is slight abdominal response in right upper quadrant, other areas negative. BP 130/80. Chest—Wheezes and rales throughout.

January 15, 1945—

Had lumbar puncture this a.m. and when examined at noon he appeared to be brighter, and could move left arm and had some strength in finger grip.

The plantar response was flexion in each foot but the right foot was more sensitive than the left. No significant changes in other responses.

Fundi: Some chocking of the discs particularly on the right side.

E.N.T. Report—Papilloedema—early and slight—some swelling on nasal side of disc.

Lumbar Puncture

Initial pressure	270 mm.
Queckenstedt's Reaction:	
Right Jugular	320
Left Jugular	310
Both Jugulars	330
Final Pressure	90 mm.
10 cc. clear fluid withdrawn.	

January 19, 1945—

Electroencephalograph Report — This recording shows slow waves of less than 1 per second to 4 per second, which are evident in most leads, arise and are preponderant in the right frontal region. The source of the discharge would appear to be the right frontal lobe approximately midway between the frontal pole and Rolandic fissure, probably involving mainly the middle and inferior frontal gyri.

SUMMARY—The findings are consistent with the presence of an expanding lesion in the midanterior or lower portion of the right frontal lobe.

January 24, 1945—

Encephalogram—There is no evidence of expansion of the ventricles. A small amount of irregular calcification is seen just to the left of the midline, slightly anterior to the position of the pineal gland.

February 6, 1945—

Lumbar Puncture—Pressure 420 mm. of H₂O.

February 10, 1945—

Patient has gradually retrogressed and died this morning at 10.45 with gradual failure of respiratory and circulatory function.

X-rays

January 4 and 11, 1945—

Chest—Slight mottling left upper lobe.

January 18, 1945—

There are some irregular spicules of calcification just to the left of the midline near the anterior horn of the pineal. Some fainter and diffuse calcification is seen in the central portion lower part of the parietal area of the left side.

Laboratory

Urine—Negative.

Hematology January 4, 1945—Hb 88%; C 0.97; RBC 4,500,000; WBC 8,750; Polys 72% Eos 1% Lymphos 20%; Monos 7%; Sed. Rate 14mm.

Wasserman—Negative.

January 15, 1945—

Spinal Fluid—Globulin increased. Cells, 1 per cumm. Mastic 00000/0. Wasserman, negative. Total Protein, 44 mg%.



Born 1881.

In this case the problem is that of a man, aged 64, who began to have weakness of his left arm about Dec. 1, 1944, and this weakness apparently progressed, gradually and steadily, till he had complete paralysis of his left arm, left leg, and finally death occurred on Feb. 10, 1945—seven days after the onset of symptoms.

There are two parts to our neurological discussion.

1. Where is the lesion.

2. What is the lesion.

By applying the principles of neuro-anatomy and physiology, one attempts to localize the lesion.

the Central Nervous System. This is often difficult enough to do. The investigation becomes more complicated when there are false localizing signs, as are often present in brain tumors. These false localizing signs are caused by tumors in other regions than by direct compression, and frequently include the pyramidal tracts. Lassek examined 119 medullas of 119 brains in which there were cerebral tumors of various types and in various regions. In each case, there was clinical evidence of pyramidal tract damage, but on histological examination, there were only 17 brains which showed evidence of degeneration in the pyramids.

This man had clinical evidence of a lesion of the right pyramidal tract above the level of the

1. Weakness of his left arm.
2. Weakness of his left leg.
3. Weakness of left face.
4. Babinski sign on the left.
5. Loss of Abdominal Reflex on the left.

The left facial muscles were reported paralyzed. There was no mention of the inability to close the left eye, or to use the frontal muscles, so this will be considered an upper motor neurone lesion.

The statement that there was complete paralysis of the muscles of mastication on the left, and no other loss of function of the fifth cranial nerve, I find difficult to interpret. Early in the course of hemiplegia there may be weakness of the muscles of mastication on the appropriate side, but this is not a prominent feature and is transient. The explanation is that there is a bilateral innervation of the motor component of the fifth cranial nerve. I should like to interpret that physical finding as some weakness of the muscles of mastication on the left side." Otherwise one would have to consider a nuclear or infra nuclear lesion and I can't fit an isolated lesion like that into the picture at all.

I think the observation that the uvula and anterior and posterior pillars seemed to deviate to the left, can be ignored. That appears to have been incorrect wishful thinking. In the first place, the tenth cranial nerve supplies the soft palate not the ninth. Secondly, in a lesion such as this one, any deviation of significance would be toward the right.

The other cranial nerves were evidently normal. The stretch reflexes as recorded, are not very helpful. Except for the biceps, they were reported as equal on the two sides. This examination, presumably was done on Jan. 3 and at that time he had very little power in his arm, forearm and hand but otherwise not much weakness.

The examiner stated that extension of the forearm was done by the pronator teres. As well as realizing that the pronator teres does not produce extension of the elbow, it must be remembered

that the motor cortex, the Betz cells and their axons are concerned only with joints, and not muscles. The cortex produces only movements of a joint not individual muscle contractions.

There is no report of spasticity, and other than the cranial nerves, there is no record of sensation of any kind, touch, pressure, pain, temp. vibration or position, and no mention of co-ordination.

Speech difficulties were noted. These were not described at all. On Dec. 1, the patient himself noticed he couldn't talk correctly. Although this could have been dysarthria, I think much more likely, it was aphasia. Dysarthria in this case would be caused by an upper motor neurone lesion affecting mainly the bulbar motor nerves. These cranial nerves have a bilateral innervation so that the dysarthria, if any, would be temporary in a unilateral lesion. At that time there was no evidence of facial weakness so that I think dysarthria not very likely. This aphasia was apparently motor or verbal. A lesion producing this type of aphasia is in, or just subcortical to, Broca's area. That is, in, or deep to, the posterior part of the third frontal gyrus, on the left side in the 90% of people who are right handed, and on the right in the 10% of people who are left handed. There was no mention in the history whether this man was right or left handed. The only clue is that he couldn't hold his fork properly in his left hand after he became ill on Dec. 1.

Confusion is common in hemiplegic patients. However, lesions, especially tumors, of the frontal lobes produce mental changes. The mental disturbance is a progressive dementia, having an insidious onset. These mental signs associated with frontal lobe tumors initiate the illness and must be differentiated from the late apathetic, confused state resulting from increased intracranial pressure. These may be differentiated by reducing the intracranial hypertension, as was done in this patient by lumbar puncture on Jan. 15. The patient became brighter, so that apparently, at least some of his confusion was due to increased intracranial pressure.

This man had an E.E.G. which seems to help us in placing the lesion in the right frontal lobe. Slow delta waves can be produced by increased intracranial pressure, but as there seemed to be a focus in the right frontal lobe, presumably there was a lesion in that region.

The evidence so far, places the lesion in the subcortical region (centrum semi-ovale) of the right frontal lobe just anterior to the central sulcus.

The patient was sixty-four years of age. It was reported he had a clot of blood on his brain at the age of 24. As there is no more information on that subject, it will not be considered further. It was also reported that he was treated for hypertension seven years before admission to hospital. As his

blood pressure was normal during his illness that too will be ignored.

He was in the correct age group for cerebrovascular accidents. However, I don't think a vascular accident explains the clinical course.

Cerebral hemorrhage usually has a dramatic onset with unconsciousness, vomiting, Cheyne-Stokes respirations and cranial nerve palsies. Blood pressure is usually raised. It should be noted that hemorrhage may take place into a brain tumor. One other type of hemorrhage might be mentioned and that is chronic subdural hematoma. A history of injury can't always be obtained. I don't think that subdural hematoma is the diagnosis in this case.

In cerebral thrombosis and arteriosclerosis, there are often premonitory signs and symptoms such as transitory attacks of aphasia, mental confusion, paresis or paraesthesias. This man had weakness and aphasia on Dec. 1 but these were not transitory but got progressively worse. In cerebral thrombosis it takes only about 24-48 hours to develop the complete clinical picture of hemiplegia. This patient got progressively worse for 70 days.

Embolism also has a sudden onset. It is possible that a small embolus, which at first produces mild symptoms, may initiate a thrombosis and thus a more serious clinical condition may be formed. Seventy days is much too long a time to consider embolism and thrombosis.

A cerebral tumor both primary and secondary must be considered.

A primary tumor may occur at any age, but a secondary tumor occurs most frequently between the ages of forty-five and sixty-five.

There is no mention of headache in the history which undoubtedly he had with the recorded increased intracranial pressure. He had papilloedema more marked in the right eye. Papilloedema occurs late and is not usually very marked in frontal lobe tumors, as in this case. Increased intracranial pressure was progressive and was the cause of his death on Feb. 10.

The most common types of cerebral tumors in adults are astrocytomas, and the glioblastoma multiforme. The former is a relatively benign tumor and usually is compatible with life of over six years. The latter, however, is a very malignant rapid growing tumor, and not infrequently kills the patient in a matter of a few months. There is the added factor that hemorrhage may occur into the substance of a glioblastoma multiforme, and so hasten the end.

Secondary tumors most commonly arise from the lung or breast, but may originate in the colon, skin (melanoma) stomach, kidney, prostate, etc.

It is noted that this man had some mottling in the left upper lung field, as seen on the X-ray films

of Jan. 4 and Jan. 11. It was reported that the side of the chest did not move as well as the right. The question arises, did he have partial bronchial obstruction from a tumor, producing a pneumonia of the left upper lobe? Secondary tumors in the brain are fast growing and often multiple. The diagnosis of secondary tumor is a distinct possibility in this case, but I think seventy days is a short time from the first symptom to death.

I am of the opinion that the most likely diagnosis is subcortical Glioblastoma Multiforme in the right frontal lobe, situated so that the motor fibres are all involved, also the subcortical fibres connected with Broca's area.

(The autopsy revealed a primary Bronchogenic carcinoma with secondary in the brain).

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D. C. Brereton, M.D.,
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Summary

Dr. H. E. White

Bronchogenic Carcinoma

As this tumor arises from the bronchi it is commonly called bronchogenic carcinoma, although bronchial carcinoma is a preferable term, bringing the condition in line with gastric, renal and other carcinomas.

Incidence

Primary carcinoma of the lung used to be regarded as a condition of great rarity. Now it is important to think of a pulmonary neoplasm when a patient in the cancer age, showing no symptoms of cardiac, renal or arterial disease, begins to cough and is short winded."

Boyd and Steiner believe the increase in pulmonary neoplasm is apparent rather than real. Some believe there is a real increase. Adams, of the Lahey Clinic, places the frequency of primary cancer of the lung as 6-8% compared with all other cancer. In comparison with all diseases incidence varies from 0.8-2.6%.

In Deer Lodge Hospital in 340 autopsies the incidence of bronchogenic carcinoma was 17 or 5%.

The disease is more common in males than females in ratio of 4:1 and some believe the ratio is higher.

Occurs chiefly between 40-60 years but has been reported in infants and extreme old age—few months old to 91 years of age.

Etiology

Many agents have been implicated but none proved. Probably some unsuspected chemical carcinogenic agents involved.

Simons in Smith and Gault says, "no single agent is the sole cause of pulmonary cancer. Without exception all etiologic factors suggested have one common quality—the production of chronic pulmonary irritation."

Pathology

The right lung is attacked more often than the left and bilateral involvement is rare.

In this hospital in 17 cases: Right lung, 9; left, 8; and bilateral involvement, 5.

Classification on Gross Appearance

Based on distribution of disease in lung:

1. A nodular mass at the hilum.
2. A diffuse infiltrative form.
3. A peripheral form.
4. Miliary carcinosis.

A Nodular Mass at the Hilum

This form shows more or less evident relation to a main bronchus. It may project into the lumen as a papillary mass which may block the bronchus and cause atelectasis. The nature of such a lesion is self evident. But it may merely cause a fibrous thickening of the bronchial wall with narrowing of the lumen and only a suggestion of roughening of the mucosa. The size of the tumor varies greatly. It may be no more than 1-2 cm. in diameter and yet may have caused large and multiple abscesses responsible for the death of the patient. Usually, however, it extends outward for a considerable distance into the surrounding lung, and may fuse with the enlarged bronchial lymph nodes.

A Peripheral Form

In a relatively small number of cases the tumor arises in the peripheral part of the lung from a small bronchus; such tumors tend to be more circumscribed and are those best suited for surgical removal. The rest of the lung may show a few or many smaller nodules, representing spread along the lymphatics.

Miliary Type—Rare

In this type tiny nodules are scattered throughout the lung; at least the majority of these cases are secondary to an undiscovered primary focus.

Diffuse Type—Rare

This type is diffuse and resembles lobar pneumonia.

An entire lobe, or the whole lung, is converted into a firm gray mass which looks just like a pneumonic consolidation until microscopic sections are made.

Microscopic

The microscopic appearance is most varied. There is perhaps no tumor which is so pleomorphic as cancer of the lung, and this explains why in the past it has been so frequently mistaken for other tumors.

Small Cell or Anaplastic

The anaplastic cells may be round cells of the simplest type, or spindle-shaped like those of a spindle cell sarcoma. They may be oval, as in the "oat-cell" type of the English writers. All these have commonly been regarded as sarcomas (round-cell, spindle-cell, oat-cell) in the past.

This type occurs at an earlier age, spreads widely throughout the lymphatic system, and runs a rapid course.

Epidermoid or Squamous Cell

The epidermoid type is most favorable for surgical operation, for the tumor remains confined to the hilus for some time, involvement of lymph nodes is not marked nor does it occur early, and there is little tendency to metastasize by the blood stream, spread being local rather than to a distance.

Glandular

The more differentiated cells are cubical or columnar in shape, and may be collected in groups (medullary arrangement) or arranged around gland like space into which papillary processes may project (adenocarcinomatous arrangement).

The adenocarcinoma also spreads extensively. Mucin is usually present in the adenocarcinoma. It is highly suggestive of cancer of the lung, but does not prove an origin from the mucous glands.

The stroma in bronchogenic carcinoma is very variable. It may be very scanty or so abundant as to suggest scirrhous cancer of the breast. Silver staining shows the connective tissue reticulum separates clumps of tumor cells, but does not penetrate between even the most anaplastic cells, thus indicating that these tumors are true carcinomas, however, closely they may resemble sarcomas.

The small cell or anaplastic and epidermoid or squamous cell are the most common types.

Method of Spread

1. Through the lung.

Spread through the lung is mainly by way of the perivascular and peribronchial lymphatics with the formation of new nodules at a distance from the primary tumors. The tumor cells may also creep along the bronchioles and form a new lining for the alveoli. There may be extension to neighboring structures (pericardium, heart, etc.).

2. To the lymph nodes:

Spread to the lymph nodes is constant; first the regional nodes (tracheo-bronchial and medias-

tinal), but later more distant glands (supraclavicular, cervical and retroperitoneal) may be involved. The mediastinal mass may be larger than that in the lung, and in the past a diagnosis has often been made of mediastinal sarcoma with secondary growth in the lung.

3. To distant organs:

Spread to distant organs is very common. The order of frequency is as follows: (1) Liver, (2) Brain and bone, (3) Kidney and adrenal. Less commonly the pancreas, thyroid, etc., may be involved. The combination of metastases in brain and adrenal is remarkably common. The brain metastasis is often mistaken for a primary cerebral tumor, because the cerebral symptoms may precede the pulmonary ones.

There was a case in this hospital where a laparotomy was done for tumor growth and it was found to be secondary to bronchogenic carcinoma.

Karsner says: Metastases involve in the approximate order of frequency, the regional lymph nodes, liver, kidney, lung, pericardium, abdominal lymph nodes, pleura, brain, adrenals, bone, cervical lymph nodes and heart.

Symptoms

Cough—initially dry but soon productive of thin mucoid and later purulent sputum.

Pain or chest discomfort—Severity varies from a sensation of tightness in the chest to that of mild substernal oppression in intrabronchial lesions, through the many grades of pleurisy in pleural involvement on to the terrible intractability associated with extension to the superior pulmonary sulcus and invasion of the brachial plexus.

Hemoptysis—due to ulceration of bronchial mucosa or tumor surface—varies from streaking or occasional spotting to actual haemorrhage.

Hemoptysis of some degree every day over a period of time is one of the most positive symptoms of pulmonary carcinoma. Intermittent blood streaking is more commonly encountered.

An initial haemorrhage may not be succeeded by further bleeding for some time but if there is persistent and daily staining, carcinoma is the only condition apart from hydatid disease, that can produce this.

Partial encroachment on a bronchus to the point of incomplete obstruction with production of a **wheeze**. Watch out for a unilateral wheeze and localized emphysema.

Recurrent attacks of bronchitis, pneumonitis and so called "grippe," frequently appear in the clinical picture, as a reaction to infection almost invariably a sequel to bronchial obstruction.

Dyspnea—pleural effusion (late sign — bloody fluid). May be an early symptom. Shortness of breath on exertion, or transitory "asthma" may indicate the onset of atelectasis which otherwise

remains symptomless. Dyspnea is a common marked symptom and is probably due to partial blocking of a main bronchus, thus interfering with ventilation of a lobe or whole lung, or may be of cardiac origin due to drawing over of the mediastinum and interference with the heart's action.

Symptoms and Signs Which Signify Clinical Inoperability

1. Hoarseness, due to paralysis of a vocal cord usually denotes invasion of the recurrent laryngeal nerve by carcinoma, and is more common in advanced left sided lesions, due to the long course of the nerve passing under the arch of the aorta anteriorly in intimate relation with a hilum of the lung. Must rule out lesions of the vocal cord itself—e.g. benign papilloma of the vocal cord, inflammation of vocal cords.

2. Pain frequently indicates invasion of the parietal pleura, or when experienced in the arm and shoulder, invasion of the brachial plexus and intercostal nerves.

3. Horner's syndrome indicates invasion of the region of the thorax and neck occupied by the cervical sympathetic chain.

4. Dyspnea, when due to a massive sanguineous pleural effusion, indicates invasion of the pleura by the malignant process. Dyspnoea, due to atelectasis of a lobe or lobes of the lung does not signify inoperability.

5. Paradoxical motion of the diaphragm, due to invasion of the phrenic nerve also indicates extension of the tumor beyond the limits of surgery.

6. The presence of cervical or axillary lymph node metastases other metastases for example, in the brain, bones and liver, precludes surgical intervention.

Diagnosis

1. **X-ray**—Sellars, et al, believe X-ray films of the chest essential—bronchography can be used to show obstruction beyond the range of bronchoscopic scope.

In pleural effusion some advise draining of fluid to obtain better visualization. It must be remembered fluid may return rapidly taking only a few days.

2. **Bronchoscopy**—Sellars et al "Bronchoscopy has to be performed as a routine if surgery is contemplated, since the growth may be seen and available for biopsy. Pressure on the bronchi from growth or glands, and infiltration, deformity, or rigidity of the bronchi can be observed. Bronchoscopy, however, gives only a restricted view of the bronchial tree; the upper lobe bronchi are visible only over a small length but usually the information obtained is most valuable."

If history and signs are suggestive of T.B. and 2 or more concentrated sputums are negative the patient should be bronchoscoped. Adams, et

oston, does not recommend routine bronchoscopy. 3. **Sputum**—for Carcinoma cells. This has been proven of great diagnostic importance and should not be undertaken within 2 weeks of bronchoscopy or any manipulation which leads to desquamation of bronchial epithelium.

Woolner and McDonald of the Mayo Clinic: Study of malignant cells in sputum and bronchial secretions provides a useful adjunct to already established methods of diagnosis of bronchogenic carcinoma. Such a study is especially useful in the presence of lesions of the upper lobe or lesions otherwise inaccessible to the bronchoscope, for the obtaining of specimens for biopsy. The method provides a convenient means for establishment of diagnosis in suspected bronchogenic carcinoma when bronchoscopic examination is contraindicated. A positive result of examination of the sputum or bronchial secretion may be expected in at least 80% of cases of bronchogenic carcinoma. A malignant process situated in any part of the respiratory tract, or even in the oesophagus, may cause carcinoma cells to appear in the sputum. A negative result of cytologic examination does not exclude the possibility of the presence of carcinoma."

A sputum positive for T.B. does not necessarily rule out Bronchogenic carcinoma as both conditions may be present.

4. **Punch or Aspiration biopsy**—Hollingsworth says it is a potentially dangerous procedure and does not recommend it.

5. **Pleural effusion for Cancer cells**—Effusion may be clear, bloody or purulent. Findings of cells means inoperability and a negative report does not rule out carcinoma.

6. **Thoracotomy**—Finally if all other means fail to establish a positive diagnosis and x-ray evidence is sufficiently strong, there being no obvious metastatic lesions or other contraindications, exploratory thoracotomy should be done. It is a relatively safe procedure and carries a low mortality and morbidity rate.

Treatment

1. **Surgery**—Only hope of successful treatment lies in radical surgery. Excluded cases are those with pleural effusion, obvious glandular involvement, infiltration of the mediastinum and phrenic and vagus nerves, and extension into diaphragm and chest wall.

2. **X-radiation**—Disappointing. Block and Bogardus reviewed 88 patients treated for bronchogenic carcinoma by x-ray therapy found it was not satisfactory and definitely should not be used for psychologic reasons alone in advanced cases.

Steiner says, "Survival was not notably prolonged by irradiation."

3. **Combined surgery and X-radiation**. Possibilities have not been fully explored.

Hollingsworth makes the point that the majority of patients do not seek medical advice for 3 or more months after onset of symptoms and in more than 50% of cases a diagnosis of bronchogenic carcinoma is not made for 6 or more months after patient seeks medical advice.

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EDITORIAL

J. C. Hossack, M.D., C.M. (Man.), Editor

Among my New Year Resolutions is one I mean to keep and one that I am already ready to forgo. The one I mean to keep is to get the Review out at its proper date, which is the first of the month. We have, of course, a deadline which is the 10th of the month preceding issue, but this is merely a theoretical date. We never get anyway near the end of our job by then. So we have a super-deadline which is the 20th. This barely gives us time to get "the baby to bed" which is Mr. Whitley's quaint way of saying that the presses are rolling. But more often than not the baby is far from ready for bed on the 20th so we have a super-duper-deadline, on the last day of the month. By then our nerves are frayed. Mr. Whitley looks as if he himself hadn't been in bed for nights and the printer is threatening to do everything except commit suicide which, under the circumstances, is the one thing that would please us. But we are hoping to manage things better in 1948.

My other resolution was to form a Society for the annihilation of Oviparous Animals or, more

specifically, a Society for the Extermination of Gallina Domestica or the Common Hen. My reason for this is the fact that for some weeks my diet has been practically restricted to eggs. I never suffered from ovo philia and now I have a definite ovo (what's the Greek word for hatred?). An egg once in a while is tolerable. But when you see the damned things morning, noon, and night it gets you down. I have yet to meet the culinary Sherlock Holmes who can so disguise an egg that it looks like something else. I tried to make things tolerable by imagining that I was an egg-starved Londoner but it did not work. So the next time a hen crosses the road I am driving on, I will deliberately with evil intent and malice aforethought run over the beastly egg-layer and make sure that at least her egg manufacturing mechanism is completely blitzed. And any one who wishes to prove to me the sincerity of his friendship has merely to do likewise. Moreover he is welcome to bring me the body. I still like roast chicken.

Letters to The Editor

Woodlands, Manitoba,
Dec. 22nd, 1947.

Dr. J. C. Hossack,
Editor, Manitoba Medical Review.

Dear Sir:

Being a country doctor's wife, I have no time for reading unless I play truant from my household duties. Such was the case when I skimmed through the pages of the Manitoba Medical Review and read Dr. Roy Martin's splendid address in the November issue.

Although my letter may not serve to solve any of the problems of rural practice, it may throw some light on what the country doctor endures.

Dr. Martin gives only his own opinion and for that reason I know that he will take no offense when I say that such flourishing good farming districts as Neepawa cannot be compared with unorganized territory and districts, east and west of the Interlake (Gypsumville) Line.

Being a nurse, it has fallen to my lot to co-operate and after 21 years of country practice, during which time our home has been the centre of every imaginable emergency, I feel only as a human would—we have done our share.

In the spring, summer and fall of the year, side roads are often impassable for automobiles, so, teams, big trucks, or anything that is available must be hired. In the winter, due to blizzards, the

doctor would often be away for two days, picking up drifted-in trails and losing his way ending in the hiring of a fresh team to get to his destination. Luckily, some kind neighbor would volunteer as a guide. Quite a common means of transportation was the railroad jigger with such expenses as gasoline, oil, railroad fare and "time and a half" wages for the section foreman if he cared to collect. Thus the country doctor carries on any hour of any day or night, shovelling tons of snow, sinking his car into mud-holes hoping the nearest farm home is not too far away. Sometimes flannelette has to be bought when there is nothing to wrap around the new baby except an old work shirt, or a washed-up rayon curtain. I could continue and fill pages with experiences such as this, some of which are mighty heart rending. However, the blessing of the family allowance has served well and has changed many of such appalling scenes. In case of another depression I hope that some means will be found to protect the sick and also the Manitoba rural practitioner, who for every one trip as such I have mentioned, about three had to be paid out of his own pocket including the necessary medications for his patients.

Our medical students were not afraid to follow our troops to the treacherous battlefronts, knowing that modern equipment was there to enable them to fulfill their duties. Why will they not follow

the life of rural practitioners? It seems a pity that similar conveniences have not been brought out to more of the rural districts of Manitoba now that the war is over. For the last four years we have lived only 30 miles from Winnipeg and the house we call a home is only a rented one. Also, we are still deprived of all the comforts of modern conveniences in that home.

At the close I would just like to say that I am sorry to read in the December issue of the Review that "Another One of Them" has had disappointing relationships with a Health Unit Nurse. Here, it has been quite the contrary. Good co-operation between the local doctor and nurse has proved valuable in this district. It has improved organization of clinics and by special arrangements many of the "tied down" mothers have been able to get their very important pre-natal care. Bed-ridden invalids and countless others have benefitted by the comfort, care and good guidance from our Health Unit Nurses. On one occasion a woman, seven months pregnant, was found to be disregarding outstanding symptoms of a "placenta praevia." I give the nurse credit for possibly having saved the lives of two by calling the doctor. It is my belief that the Health Unit is the first important step toward the betterment of rural health, especially in the more remote parts of the province.

Perhaps a personal interview with a country practitioner might prove of some value to the

newly-appointed committee to solve the problem of the rural practice.

Yours truly,

(Mrs.) N. Hjalmar



Representation on the Provincial Executive of the Canadian Medical Protective Association

Dear Sir:

As one of the oldest members of the Manitoba Representatives of the Canadian Medical Protective Association, I am writing to suggest instead of the present "happy-go-lucky" method of appointment of our Provincial Executive of the Manitoba Medical Association shall review annually the personnel of this Provincial Executive and be responsible for rotating the membership thereof. Hitherto, I believe I am correct in stating that, when a vacancy occurred, the nomination to fill the vacancy has been made by two members of the Protective Association in good standing in writing to the Secretary at Ottawa. The present membership consists of four Winnipeg men and one from Brandon, of whom three have served much longer than the other two. A rotation plan might be devised whereby one, say the oldest appointment may be retired annually. I suggest that I might have the distinction of being the first to be retired!

H. M. Speech

OBITUARIES

Dr. August Blondal

Dr. August Blondal, aged 58, died Jan. 6th in Grace Hospital, Winnipeg, where he was a member both of the honorary medical staff and the board of directors. Born in Edinburg, North Dakota, he lived for a time in Oregon before coming to Winnipeg. He attended Wesley College, Winnipeg and the Manitoba Medical College from which he graduated in 1913. Seven years later he and his wife went to Scotland and England where he did post-graduate work at the Royal Maternity and Samaritan hospitals in Glasgow and the Society of Medicine in London. Returning to Winnipeg he engaged in practice and in 1930 was appointed Demonstrator and four years later, Lecturer in Obstetrics on the Faculty of Medicine, University of Manitoba.

Dr. Blondal had a talent for drawing. Two of his happiest cartoons were "St. George and the Dragon" showing Dr. Speechly attacking the mosquito and "Cincinnatus at the Plow," showing Dr. E. W. Montgomery being called from rural pursuits

to be the first Minister of Public Health and Welfare in the Province. He was one of a committee of two who drew up the design of the emblem of the Manitoba Medical Association.

He is survived by his widow, two sons and two daughters.

His pleasant disposition won for him a host of friends, both in Medical circles, among his patients and in the First Icelandic Lutheran church of which he was a past vice-president.

Dr. Henry Harris Hutchinson

Henry Harris Hutchinson, M.D., died suddenly on November 28 at his residence in Winnipeg, the age of 73.

Born in Toronto, Ont., he graduated from Trinity College in 1899 and came to Winnipeg in 1900. He is survived by three sons, Dr. Henry H. Hutchinson, of Neepawa; Dr. Herbert Hutchinson, of London, England, and W. T. Hutchinson, of Edmonton, and four grandchildren.

CURRENT NOTES & NEWS

Reported by M. T. Macfarland, M.D.

A New Start

will start anew this morning with a higher, fairer
 creed;
 will cease to stand complaining of my ruthless
 neighbour's greed;
 will cease to sit repining while my duty's call
 is clear;
 will waste no moment whining and my heart
 shall know no fear.
 will look sometimes about me for the things that
 merit praise;
 will search for hidden beauties that elude the
 grumbler's gaze.
 will try to find contentment in the paths that I
 must tread;
 will cease to have resentment when another
 moves ahead.
 will not be swayed by envy when my rival's
 strength is shown.
 will not deny his merit, but I'll strive to prove
 my own;
 will try to see the beauty spread before me, rain
 or shine;
 I'll lovingly preach your duty, but be more con-
 cerned with mine.
 Author unknown, believed to be Edgar Guest.

* * *

The President and Officers of the College of Physicians and Surgeons and of the Manitoba Medical Association have received numerous cards of good wishes for Christmas and the New Year. They desire to acknowledge these expressions of goodwill and to extend to members and friends of the profession sincere greetings and every good wish for 1948.

* * *

By the time this appears in print each doctor in the province should have received from 604 Medical Arts Building an envelope containing—

1. Information card which is to be used in compiling a 1948 register of physicians to be used by the College of Physicians and Surgeons of Manitoba.
2. Statement of account of 1948 annual dues, including any arrears, and blank cheque form payable to the College of Physicians and Surgeons of Manitoba.
3. A letter over the signature of the President and Honorary Treasurer of the Manitoba Medical Association, extending New Year's greetings and soliciting your support in the work of the Canadian Medical Association and the Manitoba Medical Association, together with a blank cheque form for your convenience.

4. For members resident in the electoral district of South Winnipeg, nomination paper for a member of Council, College of Physicians and Surgeons of Manitoba, to replace Dr. W. G. Campbell, who was forced by ill-health to relinquish his appointment in October last. (Since the 1947 roll was used in the preparation of the list of members eligible for nomination and to vote, accounts were sent in December to those whose current dues had not been paid. Several members are still in arrears and it is regretted that their names are not included).

It will be greatly appreciated if you will make the content of this package one of the first objects of your attention in the New Year and return completed information card, cheques (and nomination paper) in the enclosed envelope IMMEDIATELY. Thanks!

* * *

Dr. T. C. Routley, General Secretary of the Canadian Medical Association, has been assured by Mr. Donald Gordon, of the Foreign Exchange Board, that funds spent by Canadian Doctors attending Medical Conventions in the United States of America will be regarded as business expenses and will not be deducted from the allowances available to Canadian citizens for pleasure travel in the United States.

* * *

It is appreciated that most doctors are busy men, that when they get away on a "Busman's Holiday" they may wish to be free from making notes. It is a fact, however, that their confreres are interested to hear about the places visited and the highlights of the meeting or convention attended. The Manitoba Medical Review affords an opportunity for enlarging the horizon. So traveller, share the experiences of your trip!

* * *

A new edition of the American Medical Directory is now being compiled for delivery in January, 1949. A letter requesting data has been addressed to every physician in the United States, its dependencies, and Canada. Regardless of whether one has moved or changed his address, or sent similar information recently, he is asked to fill out both halves of the card to ensure accurate listing. There is no charge for publishing the data in the Directory nor is any obligation incurred. Should you fail to receive one of the Directory information cards, a line to the Directory Department of the American Medical Association, 535 No. Dearborn Street, Chicago 10, Illinois, will ensure a duplicate.

C.A.M.S.I. JOURNAL

A copy of the official journal of the Canadian Association of Medical Students and Internes for October, 1947, has been received in the Association office and is a credit to that organization. It is a joint number of the University of Western Ontario and the University of Manitoba. In addition to an editorial by Miss Sylvia Onesti and the report of W. C. Wedlock, National President, dealing with the Canadian Medical Association convention of June, 1947, there is an announcement of the eleventh annual C.A.M.S.I. conference, which was held at Queen's University, Kingston, on November 13-16th inclusive. Manitoba representatives were Walter Fox and Ken Thorlakson and one of the chief items on the agenda was the attitude of undergraduates to the prospect of service in a rural area following graduation as a condition of acceptance as medical students by a university.

* * *

Winnipeg Medical Society

The regular monthly meeting of the Winnipeg Medical Society was held in Theatre "A" of the Medical College on Friday, December 12th, at 8.15 p.m. The Scientific Program was as follows: "The Clinical Use of Digitalis and Quinidine," by Dr. F. A. L. Mathewson, and "Death from Unauthorized Use of Thiouracil following Thyroidectomy," by Dr. A. C. Abbott.

* * *

Southern District Medical Society

A meeting of the Southern District Medical Society was held in the Morden Hospital on December 11, 1947. Seventeen members were present. Papers were given on "Carcinoma of the Breast," by Dr. K. R. Trueman, and on "Problems in Infant Feeding," by Dr. S. A. Boyd. Both papers were full of practical points for general practitioners, and both visiting doctors were very co-operative in answering numerous questions. The resignation of Dr. J. C. Elias as representative to the M.M.A. Executive was accepted, and Dr. C. W. Wiebe, of Winkler, was elected in his place. The business meeting, with Dr. S. S. Toni, President, in the chair, was taken up largely with a discussion of recent actions of the Department of Health. The M.M.A. Executive was again urged to take steps to make sure that in all matters of professional qualifications practitioners will be under the jurisdiction of a professional body, and not of the Department of Health.

A lunch was served by the Hospital staff during the proceedings, and was very much appreciated by all. The next meeting will be held at Altona, in June, 1948.

John A. McNeill, M.D.,
Secretary-Treasurer.

Manitoba Medical Association

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(With power to add)

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(With power to add)

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Representatives to Cancer Relief and Research Institute constitute members of Cancer Committee.

Representatives to Cancer Relief and Research Institute

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Dr. G. H. Hamlin, Portage la Prairie

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Dr. Brian D. Best

The Check Pusher's Reply

A tale was told not long ago
 About a certain medico
 Who, urged by hunger's cruel drive,
 Did, Oh so dextrously, contrive
 To feed himself ("List, List—O' List")
 At hand of beautiful anaesthetist ("tist, tist!")
 But others tell it otherwise—
 Those who have gazed into her eyes
 And felt the spell that in them lies
 More potent than her anaesthesia
 In causing retrograde amnesia.
 The happy wight whate'er his station
 Encountering her radiation
 Manifests inco-ordination—
 Oh Circe, must it be your mission
 To start a chain of nuclear fission
 Where'er you walk? Your slaves will say
 "I saw her! Hail, red letter day!
 Let coffee checks fall where they may." A. R. G.

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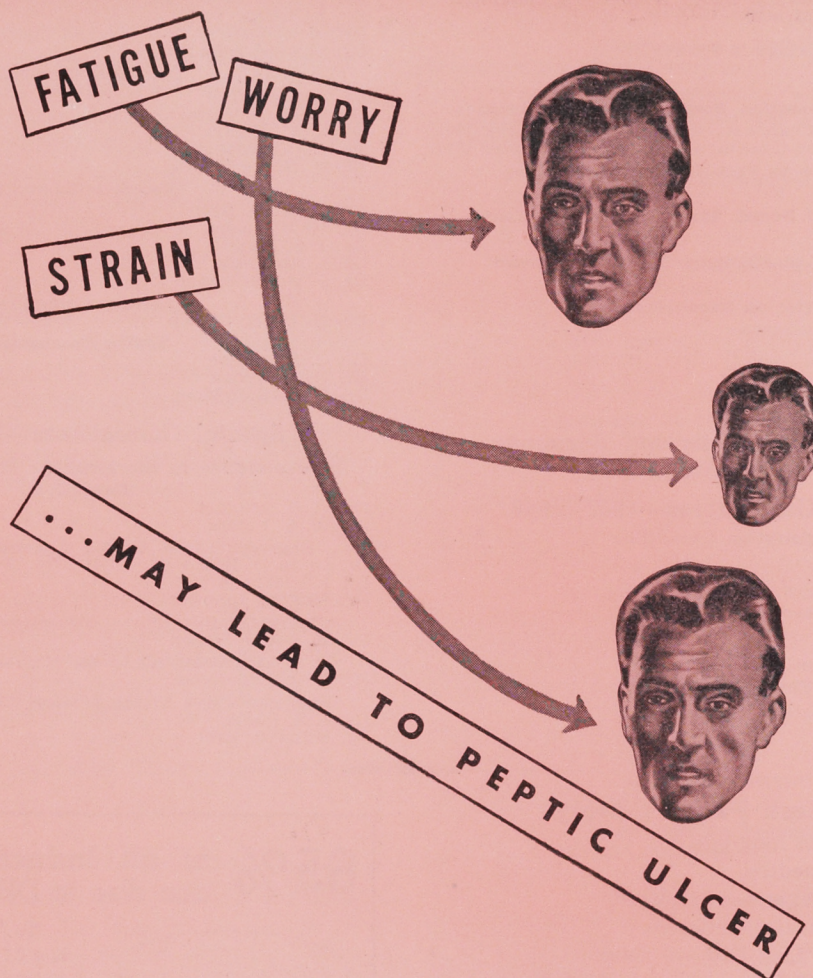
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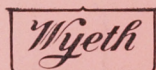


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SOCIAL NEWS

Reported by K. Borthwick-Leslie, M.D.

Dr. and Mrs. A. R. Winram are occupying their new home at 222 Waverley St.

Congratulations to Dr. and Mrs. O. C. Trainor on the occasion of their 20th wedding anniversary, Dec. 24.

A farewell banquet was held Dec. 11, 1947, in honor of Dr. Dougald McIntyre, retiring medical superintendent of the Municipal Hospital Commission. Members of the medical profession and prominent citizens of Winnipeg were in attendance.

Congratulations to Dr. and Mrs. M. T. Kobrinsky (Tubber), on the birth of Dianne Lynne, a sister for Peter—Tubberina vs. Tubber, Jan. 6, 1948.

Dr. and Mrs. D. J. Hastings are happy to announce the birth of a son, James Howard, on Dec. 9, 1947.

To Dr. and Mrs. W. J. Hart, a son, Michael James, Dec. 21, 1947.

Born to Dr. and Mrs. H. W. Chestnut, of Moosomin, Sask., on Dec. 27, a daughter, Pamela Kathleen.

Farrel Chown, who spent the holidays with his parents, Dr. and Mrs. Bruce Chown, left to resume his studies at Western University.

Dr. Robert Pollock left the city to do two weeks' post-graduate work in Chicago, Ill.

Dr. and Mrs. Alan E. McCarten and son, Brock, of Erickson, Man., spent Christmas with Dr. McCarten's parents, Dr. and Mrs. D. A. McCarten.

Dr. Eileen M. Sinclair, of Chicago, Ill., spent the holiday season with her parents, Mr. and Mrs. D. A. Sinclair.

Dr. and Mrs. R. Whetter, Dr. and Mrs. H. Hodgson and Dr. Baird Jones, of Steinback, attended the Sinclair-McCaskill wedding, Dec. 27, 1947.

Dr. and Mrs. H. Hutchinson, of Neepawa, were in Winnipeg, Dec. 19, to attend the Marshall-Sharpe wedding.

Miss Frances Sigurdson, of Rockford College, daughter of Dr. and Mrs. L. A. Sigurdson, spent the holiday season with her parents.

Dr. and Mrs. V. F. Onhauser, of 92 Walnut St., recently motored to Mexico.

The marriage took place Dec. 27, of Marie Louise Dubiensi and Dr. Julian Patrick Adamson. The bride is the only daughter of Mr. and Mrs. Bernard B. Dubiensi. The bridegroom is the son of Mrs. Adamson and the late Christopher A. Adamson. Dr. and Mrs. Adamson will reside at Port Radium, N.W.T.

The marriage of two of our Grace Hospital friends, Ruth Ferguson and Dr. G. R. Diehl, took place Dec. 18, at St. Luke's church. After their wedding trip to Minneapolis the young couple will return to Winnipeg.

Congratulations to Dr. W. J. Gunne, Kenora, Ont. Born in Florence, Ont., 1859.

Dr. Fred Cadham, after 35 years of conscientious and zealous work as Provincial Bacteriologist, has retired to a well earned rest. He is to be succeeded by his son, Dr. Roper Cadham.

Dr. Murrough C. O'Brien, of Qu'Appelle, Sask., called at the office recently to renew his subscription to the Manitoba Medical Review. He appeared in good spirits as he recalled his days as a student in the Manitoba Medical College, from which he graduated in 1897, and the time spent in practice at Dominion City, Rossburn, and Birtle, Manitoba, and Frontier, Sask. Dr. O'Brien was President of the College of Physicians and Surgeons of Manitoba in 1907 and 1908 and was President of the Northwest Manitoba Medical Society in 1917, when a minimum scale of fees was adopted by that body.

A recent letter from Dr. George Baldry expressed appreciation for Complimentary Membership in the Winnipeg Medical Society, also the Manitoba Medical and Canadian Medical Associations, following his service in the Army. Dr. Baldry's present appointment is Plant Physician for the Hood Rubber Company in suburban Boston. George's address is 198 Beach Street, Quincy 70, Massachusetts, Phone PR 3—8129 (President Exchange). He will be pleased to hear from anyone visiting the area.



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1. Leicester, H. M.: J. Am. Dent. A. 33:1004 (Aug.) 1946.

2. Streat, L. P., and Beaudet, J. P.: New York State J. Med. 45:2183 (Oct. 15) 1945.

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CANADA



Department of Health and Public Welfare Comparisons Communicable Diseases — Manitoba (Whites and Indians)

DISEASES	1947		1946		TOTALS	
	Nov. 2 to Nov. 29, '47	Oct. 5 to Nov. 1, '47	Nov. 3 to Nov. 30, '46	Oct. 6 to Nov. 2, '46	Dec. 29, '46 to Nov. 29, '47	Dec. 30, '45 to Nov. 30, '46
Anterior Poliomyelitis	25	19	2	6	596	48
Chickenpox	163	119	162	164	1185	1312
Diphtheria	4	3	17	21	72	183
Diphtheria Carriers	2	0	9	5	18	46
Dysentery—Amoebic	0	0	0	0	1	1
Dysentery—Bacillary	0	0	0	0	7	1
Erysipelas	2	0	2	3	32	63
Encephalitis	6	11	0	1	82	6
Influenza	6	6	7	4	155	197
Measles	245	59	80	115	6838	1933
Measles—German	1	0	3	1	32	26
Meningococcal Meningitis	0	3	1	1	15	18
Mumps	127	80	113	195	1418	2210
Ophthalmia Neonatorum	0	0	0	0	1	0
Pneumonia—Lobar	6	6	10	14	173	170
Puerperal Fever	3	0	0	1	5	3
Scarlet Fever	49	8	42	46	212	572
Septic Sore Throat	0	0	2	1	13	36
Smallpox	0	0	0	0	0	0
Tetanus	0	0	0	0	4	1
Trachoma	0	0	0	0	2	2
Tuberculosis	131	208	90	100	1488	938
Typhoid Fever	1	0	1	2	7	20
Typhoid Paratyphoid	0	0	0	0	0	3
Typhoid Carriers	0	0	0	1	1	3
Undulant Fever	0	0	1	1	7	21
Whooping Cough	142	82	49	37	1159	373
Gonorrhoea	119	157	153	171	1928	2225
Syphilis	47	53	69	66	558	651
Diarrhoea and Enteritis, under 1 yr.	4	5	2	1	147	237

Four-Week Period, November 2 to November 29, 1947

DISEASES	*718,699 Manitoba	*906,000 Saskatchewan	*3,825,000 Ontario	*2,962,000 Minnesota
(White Cases Only)				
Approximate population.				
Anterior Poliomyelitis	25	11	45	21
Chickenpox	163	256	1172	---
Diarrhoea and Enteritis	4	---	---	---
Diphtheria	4	5	21	18
Diphtheria Carriers	2	---	---	25
Dysentery—Amoebic	---	---	2	2
Dysentery—Bacillary	---	---	1	2
Erysipelas	2	1	1	---
Infectious Jaundice	---	2	20	---
Influenza	6	---	26	7
Leth. Encephalitis	6	1	---	3
Measles	245	97	615	756
Measles—German	1	6	61	---
Mumps	127	71	1174	---
Meningococcal Meningitis	---	---	3	3
Pneumonia Lobar	6	---	---	---
Puerperal Fever	3	---	---	---
Scarlet Fever	49	9	347	247
Septic Sore Throat	---	1	3	---
Tuberculosis	131	43	86	123
Typhoid Fever	1	1	10	---
Para-Typhoid Fever	---	3	3	---
Undulant Fever	---	---	6	17
Whooping Cough	142	52	322	292
Gonorrhoea	119	---	328	---
Syphilis	47	---	155	---
Malaria	---	---	---	9

DEATHS FROM REPORTABLE DISEASES

For Four-Week Period November 5 to December 2, 1947

Urban—Cancer, 45; Pneumonia (other forms), 6; Syphilis, 1; Tuberculosis, 5; Whooping Cough, 2; Diarrhoea and Enteritis (under 2 years), 2; Hodgkins Disease and Cellular Tissue, 2. Other deaths under 1 year, 20. Other deaths over 1 year, 165. Stillbirths, 25. Total, 200.

Rural—Cancer, 27; Influenza, 1; Lethargic Encephalitis, 3; Measles, 1; Pneumonia Lobar (108, 107, 109), 1; Pneumonia (other forms), 10; Puerperal Septicaemia, 1; Tuberculosis, 8; Whooping Cough, 1; Diarrhoea and Enteritis (under 2 years), 5; Other diseases of the skin, 1. Other deaths under 1 year, 18. Other deaths over 1 year, 163. Stillbirths, 14. Total, 195.

Indians—Pneumonia (other forms), 3; Syphilis, 1; Tuberculosis, 6. Other deaths under 1 year, 2. Other deaths over 1 year, 5. Stillbirths, 0. Total, 7.

Poliomyelitis has almost reached the 600 mark and has been the second largest epidemic of this disease in the history of Manitoba. At date of writing (December 11th) the epidemic is over and only the occasional case, not diagnosed earlier, being reported. In a few cases the diagnosis has been changed to encephalitis or some other disease.

Measles—It has been a measles year and recently there have been outbreaks in certain areas not infected earlier this year.

Typhoid Fever—One more case has appeared. The mother had typhoid fever in 1925 and on investigation, since her five year old daughter became ill, was found to be a carrier! There is no history of this woman having infected anyone else in the twenty-two years since she was ill. This demonstrates the difficulty of wiping out typhoid infection.

Whooping Cough is quite prevalent at the present time.

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